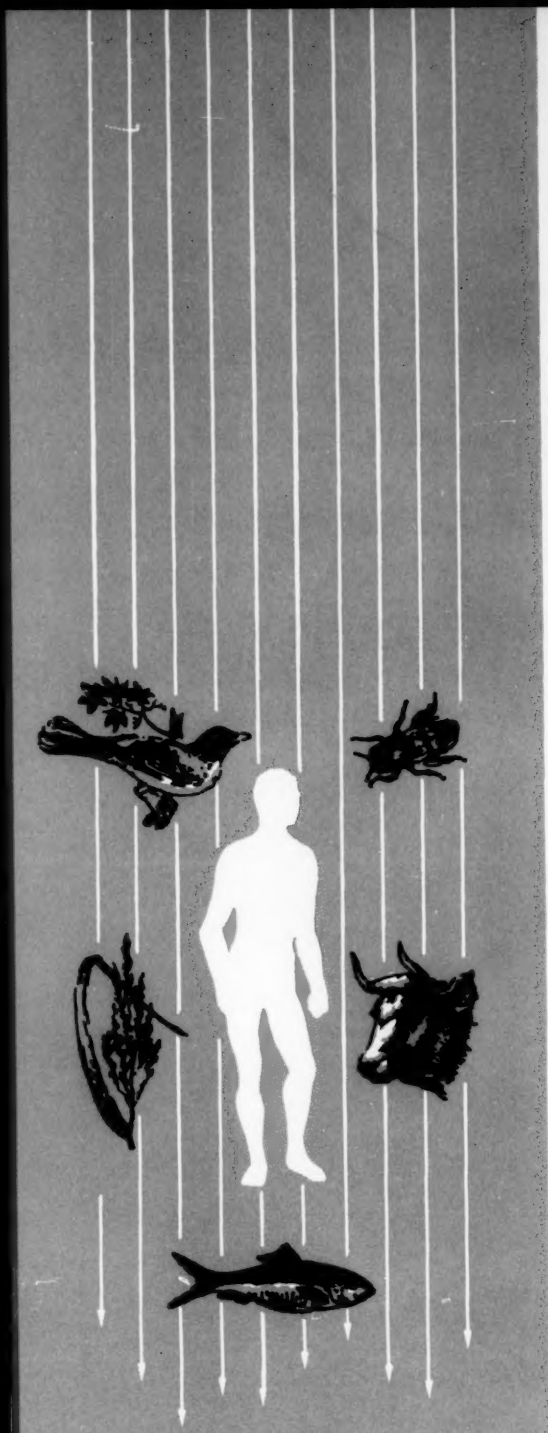

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FISH, WILDLIFE, AND ESTUARIES

DDE Residues in Young Wood Ducks (Aix sponsa) *Near a Former DDT Manufacturing Plant*

W. James Fleming and Eugene Cromartie[1]

ABSTRACT

Breast muscle DDE residues were as high as 5.8 ppm wet-weight basis and 280 ppm lipid-weight basis in young wood ducks (Aix sponsa) *collected on Wheeler National Wildlife Refuge near a former DDT manufacturing plant in northern Alabama. The average DDE residue in wood ducks collected nearest the plant was 46 times background levels 74 km from the plant.*

Introduction

A commercial DDT manufacturing plant operating on the U.S. Army Redstone Arsenal from 1947 to 1970 released DDT-contaminated effluent into Huntsville Spring Branch, a tributary of the Tennessee River near Huntsville, Alabama. River sediments along a 5.5-km section of Huntsville Spring Branch contain an estimated 7.3×10^5 kg to 3.63×10^6 kg DDT and its metabolites (ΣDDT) (Tennessee Valley Authority, unpublished report; U.S. Army Corps of Engineers, unpublished report). The area of heaviest contamination is within the boundaries of Wheeler National Wildlife Refuge (NWR).

Wheeler NWR and the surrounding Tennessee River floodplain are important wintering areas for waterfowl. Forty to sixty thousand waterfowl winter at Wheeler NWR each year. Mallards (*Anas platyrhynchos*) from the heavily contaminated area of Huntsville Spring Branch had carcass residues of up to 480 ppm ΣDDT (wet-weight basis) in a 1979 survey (*7*). Eleven of 27 mallards in that survey had carcass residues high enough to indicate future reproductive problems. Therefore, waterfowl on some parts of the refuge are acquiring significant amounts of DDT and DDE. Residues in mallard wings collected in Alabama indicated that the availability of high levels of DDT and DDE to Anatinae was primarily restricted to the counties encompassing Wheeler NWR (*2*). The present study examines the geographical pattern of DDT contamination of waterfowl within these counties.

Methods

Juvenile wood ducks (*Aix sponsa*) were collected by trapping and shooting at four locations on Wheeler NWR and at two additional sites in the Tennessee River floodplain about 145 km by water (75 km by air) upstream and 50 km by water (32 km by air) downstream from the confluence of the Huntsville Spring Branch–Indian Creek embayment with the Tennessee River (Fig. 1). Collections were made between July 20 and August 7, 1979 by workers from the U.S. Army, the Tennessee Valley Authority, the Alabama Department of Conservation and Natural Resources, and the U.S. Department of the Interior. In addition, addled wood duck eggs were collected from nest boxes at two locations on Wheeler NWR between July and September 1979. One egg from each of five nests from each of the two locations was analyzed.

Wood duck carcasses were frozen and shipped to Patuxent Wildlife Research Center for preparation and analyses. Eggs were shipped whole and unfrozen. Wood ducks were aged on the basis of plumage development (*3*). About 20 g breast muscle was dissected for analysis from each carcass. Egg contents were removed and chemical residues were adjusted for moisture loss (*8*).

Samples were analyzed for DDT, DDE, TDE, PCBs, heptachlor epoxide, dieldrin, oxychlordane, *cis*-chlordane, *trans*-nonachlor, endrin, HCB, and mirex. A 10-g portion of the homogenized sample of egg or muscle was mixed with anhydrous sodium sulfate, and extracted 7 hours with hexane in a Soxhlet apparatus; the lipids were removed by Florisil column chromatography. Pesticides and PCBs were separated on a SilicAr column into three fractions. The procedures

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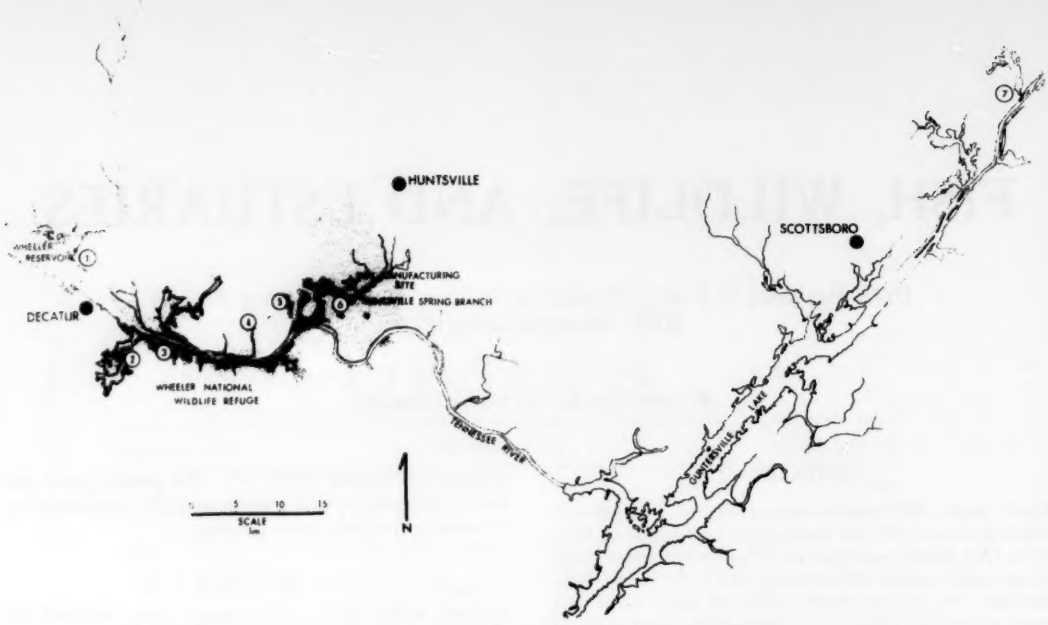

FIGURE 1. *Wood duck and wood duck egg collection sites in the Tennessee River floodplain, northern Alabama. Tables 1 and 2 identify the collection localities.*

used were those described by Cromartie et al. (*1*). The pesticides in each fraction were quantified with a gas-liquid chromatograph using an electron-capture detector and a 1.5 percent OV-17/1.95 percent QF-1 column. Average recoveries ranged from 83 percent to 104 percent from DDE-spiked tissue. Residues were not corrected for percent recovery.

The lower limit of quantification was 0.1 ppm for pesticides and 0.5 ppm for PCBs. Residues in five samples were confirmed with a Finnigan 4000 series gas chromatograph/mass spectrometer; operating conditions were described by Kaiser et al. (*5*).

Data were analyzed by analysis of variance, Duncan's test of multiple means, and Student's *t*-test. All tests were conducted at $\alpha = 0.05$. Statistical treatment of data used 0 values where residues did not exceed the limit of detection.

Results and Discussion

Results of analyses for DDT and metabolites are presented in Table 1. The low ΣDDT residue levels for the Crow-Saunty Creek Management Area probably represent background levels of contamination for the region. Average residues in ducks from three of the four collection sites on Wheeler NWR exceeded this background level. The highest level of DDE contamination was found in ducks from Huntsville Spring Branch although this level was not statistically different from samples from Blackwell Springs. The relatively high DDE levels in young wood ducks from Huntsville Spring Branch were expected because this was the collection site closest to the former DDT manufacturing plant. DDE residues from Huntsville Spring Branch were as high as 5.8 ppm on a wet-weight basis and 280 ppm on a lipid-weight basis. Therefore, it appears that Huntsville Spring Branch is the primary source of DDT and metabolite residues for resident wood ducks and probably for other species of waterfowl that winter at Wheeler NWR and vicinity. High DDE residues in some birds from areas other than Huntsville Spring Branch suggest that movement of these birds may have had some influence on mean residue levels for the other collection locations or that small areas of heavy, localized contamination were scattered along the Tennessee River Valley in northern Alabama.

Bird No. 2 contained 1.0 ppm heptachlor epoxide and bird No. 13 contained 0.53 ppm PCBs. Dieldrin, oxychlordane, *cis*-chlordane, *trans*-nonachlor, endrin, HCB, and mirex were not detected in any muscle samples.

All 10 eggs contained residues of DDE and one contained DDT and TDE (Table 2). DDE residues in eggs from Blackwell Springs were greater than those from Garth Slough ($P \leq 0.05$) as might be expected

TABLE 1. *DDT and metabolite residues in breast muscle of juvenile wood ducks from northern Alabama, 1979*

Location	Specimen Number	Age, Days	Sex	Residues, ppm wet weight			Percent Lipids
				p,p'-DDE	*p,p'*-DDT	*p,p'*-TDE	
1—Swan Creek Management Area	15	100–120	M	1.4	—	—	1.7
	16	100–120	M	0.43	—	—	2.3
	17	100–120	M	0.25	—	—	2.2
	18	100–120	M	—	—	—	2.7
	19	100–120	M	—	—	—	1.8
Mean				0.42[a]	—	—	
2—Flint Creek, Wheeler National Wildlife Refuge	23	100–120	F	—	—	—	1.6
	24	100–120	F	—	—	—	1.7
	25	100–120	F	—	—	—	2.4
	26	80–100	F	—	—	—	1.8
	27	80–100	M	—	—	—	2.6
Mean				—[a]	—	—	
4—Blackwell Springs, Wheeler National Wildlife Refuge	1	80–100	F	0.53	—	—	1.8
	3	80–100	M	—	—	—	1.7
	4	80–100	M	—	—	—	1.7
	10	100–120	M	4.5	0.48	1.6	2.3
Mean				1.3[ab]	0.12	0.4	
5—Swan Pond, Wheeler National Wildlife Refuge	6	80–100	M	0.11	—	—	2.3
	7	80–100	F	—	—	—	2.2
	8	80–100	F	0.11	—	—	1.4
	9	80–100	F	1.6	—	—	1.8
Mean				0.46[a]	—	—	
6—Huntsville Spring Branch, Wheeler National Wildlife Refuge	12	80–100	M	0.14	—	—	2.7
	13	80–100	M	1.9	—	0.85	3.4
	14	100–120	F	5.8	—	0.43	2.1
	20	120–140	M	5.8	0.5	1.6	3.1
	21	60– 70	F	2.8	—	0.16	1.4
	22	100–120	F	0.6	—	0.33	2.1
Mean				2.8[b]	0.1	0.56	
7—Crow-Saunty Creek Management Area	28	80–100	F	0.18	—	—	2.5
	29	80–100	F	—	—	—	3.3
	30	80–100	M	—	—	—	2.5
	31	80–100	M	0.13	—	—	2.8
	32	80–100	F	—	—	—	2.9
Mean				0.06[a]	—	—	

NOTE: Number refers to location on Figure 1. Mean DDE residues with different letters are significantly different ($P < 0.05$).

TABLE 2. *DDT and metabolite residues in wood duck eggs from two locations on Wheeler National Wildlife Refuge, Alabama, 1979*

Location	Specimen Number	Residues, ppm wet weight			Percent Lipids
		p,p'-DDE	*p,p'*-DDT	*p,p'*-TDE	
3—Garth Slough	1	0.16	—	—	12.9
	2	0.15	—	—	14.0
	3	0.28	—	—	15.1
	4	0.19	—	—	13.5
	5	0.3	—	—	16.1
Mean		0.22	—	—	
4—Blackwell Springs	16	4.3	0.37	0.69	12.8
	18	1.3	—	—	15.2
	19	0.48	—	—	11.8
	22	1.8	—	—	16.4
	25	2.2	—	0.16	15.3
Mean		2.0	0.07	0.17	

NOTE: Number refers to location on Figure 1. Mean DDE levels were not significantly different ($P > 0.05$).

on the basis of distance from the DDT plant site (Fig. 1). DDE residues in eggs from Blackwell Springs were at the lower limit at which reproductive and behavioral effects have been reported for waterfowl. Black duck (*Anas rubripes*) eggs averaging 4.2 ppm DDE were about 10 percent thinner than control eggs (*6*). Mallard ducklings hatched from eggs containing an average of 5.8 ppm were hyperresponsive to tape-recorded maternal calls but were less responsive to a frightening stimulus (*4*).

Conclusions

The present work, in combination with that of Fleming and O'Shea (*2*), indicates that Huntsville Spring Branch is the primary site in northern Alabama where waterfowl acquire significant amounts of DDT and DDE. Mean muscle values of DDE in wood ducks from Huntsville Spring Branch were 46 times background residues of wood ducks 74 km away.

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Kepone Distribution in the Water Column of the James River Estuary—1976–78

Charles A. Lunsford [1]

ABSTRACT

Concentrations of Kepone residues in water collected from the James River estuary in 1976–78 ranged from 0 to 1.20 ppb. The majority of water samples collected showed no detectable residues. Kepone concentrations at the surface and bottom of the water column were similar. Water column residues varied according to seasonal and spatial differences. Levels peaked during the summer months and averaged higher in the middle reach of the estuary. Residues in the water were 1–5 orders of magnitude lower than reported residues in James River bed sediments. There was a significant correlation between water column and underlying bed sediment residues.

Introduction

The manufacturing of Kepone, an organochlorine pesticide similar to mirex, during the period 1966–75 in Hopewell, Virginia, resulted in contamination of the James River estuary. It was estimated that 90,720 kg of Kepone were released to the environment through atmospheric emissions, wastewater discharges, and bulk disposal of off-specification batches (*2*). Finfish, shellfish, and blue crabs from the James River contained Kepone residues above the action levels of the Food and Drug Administration (FDA), U.S. Department of Health and Human Services. As a result of this contamination, the estuary was closed to commercial and sport fishing with the exception of taking shad and herring (*Alosa* spp.), catfish (*Ictalurus* spp.), and female blue crabs (*Callinectes sapidus*).

A comprehensive Kepone monitoring program was established in 1975 as described by Bellanca and Gilley (*3*) to verify environmental levels and trends in assessing the magnitude of contamination. As part of the monitoring and surveillance effort, the Virginia State Water Control Board (SWCB) has monitored Kepone residues in finfish, bed sediments, and the water column of the James River estuary and the Chesapeake Bay. The present manuscript reports the results of Kepone water column monitoring in the James River estuary during the period 1976–78.

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The objectives of this present study were to determine: (a) if differences exist in Kepone concentrations at the surface versus bottom of the water column, (b) if spatial and temporal differences affect Kepone concentrations in the water column, and (c) if Kepone residues in the water column relate to the amount adsorbed to underlying bed sediments.

DESCRIPTION OF JAMES RIVER ESTUARY

The James River is the southernmost major tributary and the third largest tidal tributary of the Chesapeake Bay, in reference to the volume of river flow. The river discharges at an average rate of 212 m^3/second.

The James is described as a partially stratified estuary. The salt wedge extends approximately 64 km upstream from the river mouth; this distance varies according to the volume of river flow. In the lower estuary, circulation is characterized by a nontidal component driven largely by the mixing of salt water and freshwater (*7*). In the tidal freshwater section, water movement is dominated by freshwater flow and tidal action. The tidal reach extends to Richmond, 180 km upstream from its mouth at the Hampton Roads bridge tunnel.

The estuary has long been used for commercial and sport fishing. Fishery resources are diverse and productive; commercial fishing grounds extend 117 km upstream to the Hopewell area. Anadromous fish extensively use the freshwater and upper portions of brackish water zones as spawning and nursery areas. In addition, brackish water zones provide a nursery area for important commercial species that are taken within the Chesapeake Bay. The lower estuary is a highly productive shellfish and crabbing area. The important commercial species include the hard clam, *Mercenaria mercenaria,* the eastern oyster, *Crassostrea virginica,* and the blue crab, *Callinectes sapidus.* The estuary provides the only major source of seed oysters in Virginia.

Materials and Methods

COLLECTION OF SAMPLES

Samples were collected quarterly at 75 stations from four areas of the estuary as shown in Figure 1. The

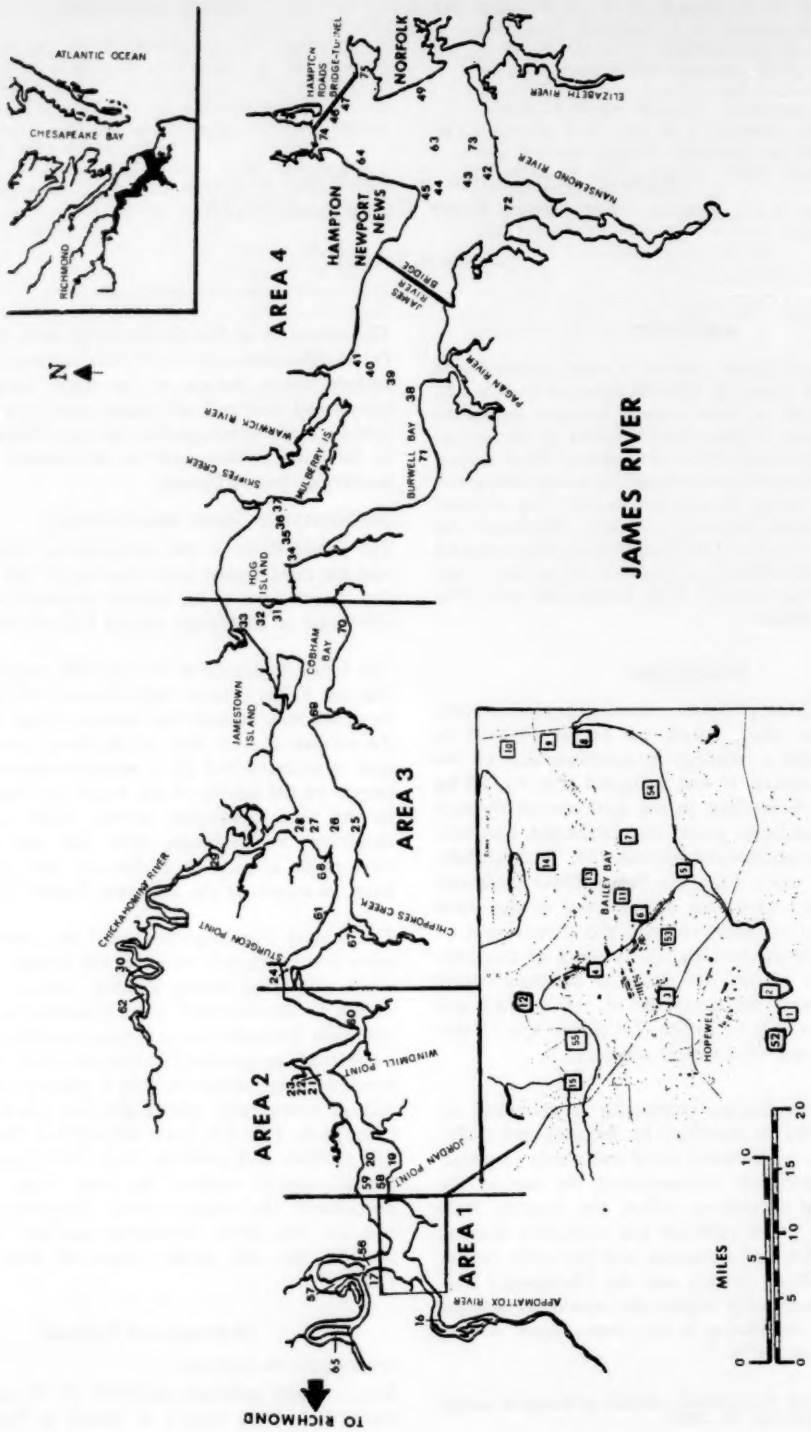

FIGURE 1. *James River estuary from Richmond to Norfolk, Virginia, and stations sampled for Kepone residues, 1976–78.*

areas are defined as Area 1, Hopewell area (km 106–101); Area 2, Jordan Point to Sturgeon Point (km 101–77); Area 3, Sturgeon Point to Jamestown Island (km 77–48); and Area 4, Jamestown Island to Chesapeake Bay (km 48–0).

During 1976 and 1977, samples were taken at both surface and bottom depths at all stations in waters $>$ 1.5 meters deep. At shallow water stations ($<$ 1.5 meters deep), only surface samples were collected. Bottom sampling was discontinued after 1977.

Samples collected at the surface consisted of grab samples collected in clean, 1.9-liter glass jars. Bottom samples were collected using a Teel pump and a 1.91-cm plastic hose. Before each bottom sample was collected, the hose and pump were purged for approximately 1 minute. The glass jars in which the samples were collected were sealed with aluminum foil, capped, and kept refrigerated until delivery to the State Division of Consolidated Laboratory Services (DCLS), Richmond, Virginia, for analysis.

During collections, water quality parameters were measured. These included water temperature (°C), dissolved oxygen, and pH. These parameters were not originally chosen to fit into the objectives of the study. Such parameters are measured routinely during ambient water monitoring by SWCB.

Water temperature determinations were made with a Yellow Springs Instruments (YSI) salinity-conductivity-temperature meter, Model No. 33. Dissolved oxygen was measured with a YSI meter, Model No. 57, calibrated by the Winkler-azide method. pH was measured with a Hach kit, Model No. 17-N.

SAMPLE ANALYSIS

Water samples were extracted in the glass jars in which they were collected, using benzene (a liquid-liquid extraction), according to the procedure of DCLS (*5*). The organic phase was dried over anhydrous sodium sulfate and concentrated in a Kuderna-Danish concentrator. Extracts were analyzed directly in a Hewlett Packard 5800 Series gas chromatograph equipped with an electron-capture detector (^{63}Ni pulsed), and a 183-cm $\times$ 0.4-cm glass column packed with 4 percent SE-30/6 percent QF-1 on 80–100 mesh Gas-Chrom Q or 80–100 mesh Chromosorb W-HP. A blank (distilled water) and a spike were analyzed with each group of samples (minimum of one each day). Spiking concentrations ranged from 0.01 ppb to 1.0 ppb; 0.05 ppb was the most common. Kepone recoveries from spiked water ranged from 70 percent to 110 percent. No corrections were made for recovery. Confirmatory analyses were conducted using a gas chromatograph equipped with a Dohrmann Model 2468 microcoulometric detector (GTS-20). Kepone residues are reported as μg/liter (ppb).

The original detection limit for Kepone in water was 0.01 ppb. The detection limit was changed to 0.02 ppb, the confidence level for this method, during the summer of 1976. A series of samples were analyzed in the winter of 1978 at a detection limit of 0.05 ppb. The limit was changed at this time because of background concentrations of naturally occurring organic interferences in the water samples.

STATISTICAL ANALYSIS

Because of the skewed data distribution, nonparametric statistics were used for data analysis. With such a skewed distribution, the median rather than the arithmetic mean is a better measure of central tendency. Both the mean and median values are presented in the results section of this paper. Statistical analyses were performed on an IBM 370/158 computer with programs available in the SAS statistical package (*9*).

Results

A comparison of Kepone concentration in surface and bottom water samples is presented in Table 1. Wilcoxon's signed-ranks test was used to determine if significant differences existed between surface and bottom concentrations. Differences were not significant at the 0.05 level for 1976 and 1977.

Seasonal Kepone concentrations are summarized in Table 2. The median values for the periods fall, 1976; winter, spring, and fall 1977; and winter 1978 were 0.00 because of the large number of samples with nondetectable concentrations (a sample with no detectable residues was treated as a zero value).

TABLE 1. *Comparison of Kepone concentrations in surface and bottom water samples of James River estuary, 1976–77*

	Residues, µg/liter (ppb)							
	1976				1977			
Source	Sample Size	Median	Mean	Range	Sample Size	Median	Mean	Range
Surface	127	0.02	0.04	ND[1]–1.20	90	0.00	0.01	ND[2]–0.11
Bottom	127	0.00	0.02	ND –0.41	90	0.00	0.02	ND –0.19

[1] Non-detectable; $<$ 0.01 or 0.02 ppb.
[2] Non-detectable; $<$ 0.02 ppb.

TABLE 2. *Seasonal Kepone water column concentrations in James River estuary, 1976–78*

Season	Residues, µg/liter (ppb)											
	1976				1977				1978			
	Sample Size	Median	Mean	Range	Sample Size	Median	Mean	Range	Sample Size	Median	Mean	Range
Winter	131	0.03	0.05	ND[1]–0.95	9	0.00	0.01	ND –0.04	54	0.00	0.00	ND[3]–0.04
Spring	76	0.03	0.04	ND –1.20	84	0.00	0.00	ND –0.05	33	0.03	0.04	ND –0.15
Summer	70	0.03	0.05	ND[2]–0.97	64	0.04	0.04	ND –0.19	52	0.04	0.05	ND –0.29
Fall	64	0.00	0.01	ND –0.16	60	0.00	0.01	ND –0.07	51	0.02	0.03	ND –0.30

[1] Non-detectable; < 0.01 ppb.
[2] Non-detectable; < 0.02 ppb.
[3] Non-detectable; < 0.02 or 0.05 ppb.

TABLE 3. *Spatial distribution of Kepone water column concentrations in James River estuary, 1976–78*

Area[1]	Residues, µg/liter (ppb)											
	1976				1977				1978			
	Sample Size	Median	Mean	Range	Sample Size	Median	Mean	Range	Sample Size	Median	Mean	Range
1. Mile 66–63	68	0.00	0.07	ND[2]–1.20	51	0.00	0.01	ND[3]–0.05	42	0.03	0.05	ND[4]–0.30
2. Mile 63–48	29	0.05	0.05	ND –0.19	20	0.03	0.03	ND –0.08	35	0.03	0.04	ND –0.14
3. Mile 48–30	76	0.04	0.05	ND –0.95	37	0.02	0.02	ND –0.09	40	0.02	0.03	ND –0.29
4. Mile 30–0	135	0.00	0.03	ND –0.59	90	0.00	0.01	ND –0.19	51	0.00	0.01	ND –0.04

[1] See Figure 1.
[2] Non-detectable; < 0.01 or 0.02 ppb.
[3] Non-detectable; < 0.02 ppb.
[4] Non-detectable; < 0.02 or 0.05 ppb.

There was no consistent temporal reduction in contamination levels during the study period. Levels in 1977 declined; yet during the spring and summer of 1978, levels increased and were similar to 1976 findings. The one prominent trend during the study period was a peak in Kepone concentrations during the summer months (July–September). To detect whether differences in residues existed due to seasonality, the Kruskal-Wallis one-way analysis of variance by ranks test was used. Differences between seasons were significant at the 0.01 level for all three sampling years.

Spatial Kepone concentrations are summarized in Table 3. Overall median concentrations were higher in the middle reaches of the estuary (Areas 2 and 3). Area 3 is generally defined as the turbidity maximum zone of the James River. This zone shifts seaward or landward depending on river inflow. Net current velocity approaches zero at this interface as freshwater moving seaward mixes with saltwater moving landward. According to Nichols and Trotman (*13*), the bulk of the river-borne sediment load in the James River is trapped within this reach.

Area 1, Hopewell area, includes Bailey Bay which is a shallow water bay into which wastewater from the Kepone manufacturers was discharged. Area 4, Jamestown Island to Chesapeake Bay, includes the major portion of commercial fishing grounds for migratory species in the estuary.

To detect whether significant differences in residues existed among the four area reaches, the Kruskal-Wallis one-way analysis of variance by ranks test was used. Differences between areas were significant at the 0.01 level for all three sampling years.

Using water temperature and Kepone bed sediment data collected in 1976–78, correlations between these variables and Kepone water residues were investigated. The results are presented as Spearman rank correlation coefficients along with levels of significance in Tables 4 and 5. Water temperatures showed a significant cor-

TABLE 4. *Correlation of Kepone residues in water column and water temperature of James River estuary, 1976–78*

Statistic	Water Temperature		
	1976	1977	1978
r	0.11	0.32	0.62
s	0.1754	0.0001	0.0001

NOTE: Spearman rank correlation coefficients (r) and level of significance (s); $P < 0.05$.

TABLE 5. *Correlation of Kepone residues in water column and bed sediments of James River estuary, 1976–78*

Statistic	Sediments		
	1976 (0–1.27 cm)	1977 (0–9 cm)	1978 (0–9 cm)
r	0.31	0.12	0.38
s	0.0001	0.0483	0.0001

relation with water column residues for 1977 ($r = 0.32$, $s = 0.0001$) and 1978 ($r = 0.62$, $s = 0.0001$); whereas the correlation for 1976 was not significant. Water temperatures for 1976 averaged lower (15.6°C ± 10.4) than those for 1977 (22.1°C ± 5.0) and 1978 (18.0°C ± 10.2) and this may explain the lack of a significant correlation. Bed sediment residues showed a significant correlation with water column residues for all three sampling years (see Table 5).

Discussion

Analysis of Kepone residues in water samples collected from the James River estuary in 1976–78 showed a range of concentrations from 0 ppb to 1.20 ppb. These values are one to five orders of magnitude lower than residue levels reported in James River bed sediments (*11*). Concentrations in James River sediments range from 0 ppm to 5 ppm. Kepone, like many other chlorinated organic compounds, is only slightly soluble in water and has an affinity for particulate matter.

Differences in Kepone concentrations at the surface and bottom of the water column were not significant. Bottom samples were expected to have higher Kepone concentrations than surface samples, because bottom water should contain more contaminated particulate matter resuspended from bed sediments. Kepone attached to particulate matter is more concentrated than dissolved amounts (*2*).

The trends apparent after monitoring from 1976 to 1978 indicate significant seasonal and spatial variations in Kepone water column concentrations. Concentrations reach the highest ambient level during the summer months, July–September. There may be various explanations for such a seasonal trend. The correlation coefficients as shown in Table 4 indicate a significant relationship between water temperature and Kepone water residues (1977 and 1978). The U.S. Army Corps of Engineers (*15*) suggested that temperature may affect the partition coefficient of Kepone in water/sediments, and that higher concentrations in the water column during the summer months compared with winter months are the result of temperature affecting Kepone partitioning. Battelle (*2*) reported that temperature has no apparent effect on Kepone partitioning.

According to R. Huggett (Virginia Institute of Marine Science, personal communication), the peak in Kepone concentrations during the summer months is most likely caused by increased numbers of phytoplankton in the water column. Phytoplankton collected in the estuary contain Kepone residues ranging from nondetectable levels to 2.06 ppm (*10*). In a study by de la Cruz and Lue (*6*), concerning the distribution of mirex along the Mississippi Gulf Coast, it was reported that the concentration of mirex in the seston (suspended matter) exceeded concentrations in water, sediments, fish, or shellfish. Phytoplankton are a major component of seston in the water column. The relationship between Kepone water column concentrations and phytoplankton biomass needs to be investigated.

Increases in ambient Kepone concentrations during the summer may require imposing restrictions on summer dredging in Kepone-contaminated areas of the estuary. Time restrictions, without regard to Kepone contamination, have been imposed in the past by regulatory agencies to limit dredging during spawning and migration periods of important commercial fish and shellfish in the James River. Studies with James River resident species, the eastern oyster, *Crassostrea virginica* (*4*), and the estuarine bivalve, *Rangia cuneata* (*12*), indicated that Kepone body burdens reach the highest levels during the summer months. This is due to increased metabolism and feeding rates corresponding with increased water temperatures. Also during the summer, increased numbers of migratory fish from Chesapeake Bay enter the estuary. Dredging during this period and the resulting resuspension of contaminated sediments may magnify Kepone uptake and result in contamination of greater numbers of organisms.

Another trend indicated by this study was a significant spatial variation in water column residue concentrations; residues averaged higher in the middle reach of the estuary. Kepone was detected at or above 0.022 ppb within all reaches of the estuary sampled. This is the recommended upper limit to result in fish tissue levels below the FDA action level of 0.30 ppm (*2*). From the results of laboratory studies (*1*), it was established that shellfish (eastern oyster, *C. virginica*) and finfish (spot, *Leiostomous xanthurus*) are capable of bioconcentrating Kepone to concentrations near or above the action level when exposed to water with Kepone residues as low as 0.023 ppb.

Kepone residues in the water column are an important component of the overall James River ecosystem contamination. The water column transports dissolved Kepone and contaminated particulate matter which serves as a continual source of Kepone and exposure to aquatic organisms. This exposure is below reported acute and chronic toxicity levels (*8, 14, 16*). However, adverse ecological effects can occur at Kepone concentrations in water as low as 0.004 ppb, which is well below present detectable limits (*2*). Even with low Kepone exposure from the water column, residues in finfish, shellfish, and blue crabs exceed the acceptable FDA action levels as a result of magnification by bioconcentration (uptake from water and sediment) and bioaccumulation (food sources).

The results of this monitoring study indicate that Kepone concentrations in the water column are ex-

tremely low. Detectable concentrations vary according to seasonal and spatial differences. Future investigations should study dissolved and suspended solids phases of Kepone in the water column to better understand the contamination and transport mechanisms.

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Organochlorine Residues and Mortality of Herons

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ABSTRACT

Since 1966, 72 herons found dead or moribund in the field have been analyzed for organochlorine chemicals. In addition, 36 herons were obtained through systematic collections, and carcasses were analyzed to determine sublethal exposure to organochlorines. Brains of birds found dead or moribund were analyzed to determine whether the birds had died of organochlorine poisoning.

Residues of DDE were found most frequently (96 of 105 carcasses analyzed), PCBs were second (detected in 90 carcasses), and dieldrin and TDE (detected in 37 and 35 carcasses, respectively) were about equal as third and fourth most frequent. Endrin, mirex, toxaphene, and HCB were found least often (8, 9, 9, and 9 carcasses, respectively). At least one organochlorine was found in each carcass, except for six heron chicks found dead in a Maryland heronry. DDE and PCBs were present in highest concentrations; they exceeded 100 ppm in two birds each.

Organochlorine concentrations were almost always higher in adult herons than in immature birds. All birds that had hazardous or lethal concentrations in the brain were adults, and most were great blue herons (Ardea herodias). *Dieldrin was the chemical most often considered responsible for death. Herons died of suspected DDT and dieldrin poisoning years after the chemicals were banned in the United States. More than 20 percent of the herons found dead or moribund had lethal or hazardous concentrations of organochlorines in the brain.*

Introduction

Numerous individuals have submitted herons of various species they found dead or moribund to our laboratories to learn whether the birds died of diseases or organochlorine poisoning. Other herons were collected in studies planned to determine mercury contamination in selected fauna at certain localities (*2*, *4*; E. H. Dustman and M. A. R. McLane, this laboratory, unpublished manuscript). Organochlorine concentrations in carcasses of birds and mammals are considered the best measure of sublethal exposure, whereas concentrations in the brain are best for diagnosing death by organochlorine chemicals (see reference *5* for review). In the absence of other indications of cause of death, concentrations of 9 ppm or more dieldrin in the brain indicate probable death by dieldrin poisoning (W. H. Stickel, this laboratory, personal communication). Dieldrin concentrations of 5–9 ppm are considered hazardous because some birds died with residues in that range in laboratory studies, although others survived (*19*; W. H. Stickel, personal communication). Birds seldom survive with more than 0.8 ppm endrin in the brain (*18*); those with 0.6–0.8 ppm may die or survive. The lower limit of the lethal range for DDE is about 250 ppm (W. H. Stickel, personal communication). Combined DDT and DDE residue concentrations of 30 ppm represent the practical separation point between dead birds and survivors in laboratory studies (*16*, *17*; W. H. Stickel, personal communication).

The purpose of the present paper is to document the occurrence, sometimes at high concentrations, of organochlorine residues in herons from various areas in the United States. Information on causes of death is presented briefly. Previously (*12*), authors compared residue concentrations in brains of herons collected in this study with laboratory-determined diagnostic lethal concentrations. Authors concluded that some herons were killed by organochlorine poisoning; others were at least seriously endangered by the organochlorines found in the brain.

Methods

SAMPLING

Most herons had been found dead or moribund in the field and were submitted for determination of cause of death. In addition, herons were collected at Lake St. Clair, Michigan ($N = 6$); Mobile Bay, Alabama ($N = 22$); and Lake Champlain, Vermont ($N = 5$) in 1970 to determine mercury contamination (*2*, *4*; E. H. Dustman and M. A. R. McLane, unpublished manuscript). Carcasses of these birds were therefore available for analysis for organochlorines. Three herons were subsequently collected at Lake St. Clair in 1973 to determine the continued occurrence of polychlorinated

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styrene compounds that were detected in the 1970 specimens (*15*).

Sixteen states were represented among the 108 birds analyzed (Table 1). Nine species were included: great blue heron (*Ardea herodias*), green heron (*Butorides striatus*), little blue heron (*Florida caerulea*), cattle egret (*Bubulcus ibis*), great egret (*Casmerodius albus*), snowy egret (*Egretta thula*), Louisiana heron (*Hydranassa tricolor*), black-crowned night heron (*Nycticorax nycticorax*), and yellow-crowned night heron (*Nyctanassa violacea*).

Some specimens were delivered or shipped to our laboratories while they were still fresh. Most, however, were frozen, packed in dry ice, and shipped by air express to the laboratory, where they were stored at — 25°C until processed for analysis.

NECROPSY PROCEDURES

Necropsies were performed on many of the specimens to determine possible causes of death. They were performed at the Patuxent Wildlife Research Center from 1969 until 1975 and at the National Wildlife Health Laboratory after 1975. Some specimens were dissected without complete necropsy or histological examination. Herons were weighed, decapitated, and then skinned. Wings were disarticulated at the olecranon (or "elbow"), and the legs at the tibiotarsal-tarsometatarsal (or "hock") joint. Liver and kidneys were removed and placed in separate, chemically clean (rinsed with acetone and hexane) bottles for subsequent analyses. The entire, intact alimentary canal was removed; care was taken to ensure that no portion of its contents spilled onto the carcass. The term "carcass" as used in the present paper refers to the remaining portion of the body (i.e., after the head, skin, feet, wing tips, liver, kidneys, and gastrointestinal tract were removed). The carcass was wrapped in aluminum foil, placed in a plastic bag, and frozen until analyzed.

The brain was removed from the skull, placed in a separate, chemically clean glass bottle, and frozen until analyzed. Samples for bacteriological and virological studies were collected at appropriate times during necropsy; observed lesions were cultured and saved for later histopathological study. Tissues for microscopic study were fixed in buffered 10 percent formalin (4 percent formaldehyde), embedded in paraffin, sectioned, and stained with either hemotoxylin and eosin, Ziehl-Neelson acid-fast, periodic acid-Schiff (PAS), Giemsa, Perl's Prussian blue, or van Kossa stains.

ANALYTICAL PROCEDURES

The analyses were performed over a period of years and consequently some changes were made in method-

TABLE 1. *Distribution of herons analyzed by state, method of collection, and frequency of organochlorine residues in carcasses*

	Number of Herons		Frequency of Residues													
State	Found Dead or Moribund	Shot	DDE	TDE	DDT	Dieldrin	Heptachlor Epoxide	Oxychlordane	*cis*-Chlordane	*trans*-Nonachlor	*cis*-Nonachlor	Endrin	Toxaphene	HCB	Mirex	PCBs
NORTHEASTERN STATES																
Massachusetts	2		2	1						1						2
Vermont		5	5	4	2			1	1							5
MID-ATLANTIC STATES																
Maryland	22		16	6	2	7	2	2	4	8	2		1	1	1	10
Virginia	5		5	4	2	4	3	2	3	4	3	1		2	1	5
SOUTHEASTERN STATES[1]																
Alabama		22	22	2		1									1	22
Florida	3		3	2	1	2	2	1	2	3	2					3
Louisiana	5		5			1										5
GREAT LAKES STATES																
Illinois	1		1			1	1	1	1	1	1					1
Michigan		9	9	6	1	9		3	8		3			4	2	8
Minnesota	19		16	5	4	7	3	4	2	7	2	4	5		3	18
Wisconsin[2]	2		2	2	1	2	2	2	2	2	2	2	1		1	2
CENTRAL AND WESTERN STATES																
California	1		1	1	1	1			1	1	1	1	1	1		1
Nebraska	1		1	1		1							1			
Nevada	3		3	1	1	1	1	1		2				1		3
New Mexico	5		5													5
TOTAL	69[1,2]	36	96	35	15	37	14	17	24	29	16	8	9	9	9	90

[1] In addition, one heron was collected in North Carolina, but only the brain was analyzed.
[2] Two additional herons were collected in Wisconsin, but only the brains were analyzed.

ology. Specimens were analyzed for residues of DDE, TDE, DDT, dieldrin, heptachlor epoxide, oxychlordane, *cis*-chlordane, *trans*-nonachlor, *cis*-nonachlor, endrin, toxaphene, HCB, mirex, and PCBs. Analyses will be referred to as Methods I or II.

Method I—Samples were homogenized, extracted in a Soxhlet apparatus, and cleaned up on a Florisil column; pesticides and PCBs were separated into three fractions on a SilicAr column as described previously (*3*). The three fractions were analyzed on a gas-liquid chromatograph equipped with an electron-capture detector, automatic sampler, digital processor, and a column containing 4 percent SE–30/6 percent QF–1 on 100–120-mesh Supelcoport. Column temperature was 190°C.

Method II—Samples were analyzed as above except a column of 1.5 percent OV–17/1.95 percent QF–1 on 100–120 mesh Supelcoport was used to separate *cis*-chlordane and *trans*-nonachlor. Toxaphene was quantitated as described by Prouty et al. (*14*). Pesticides and PCBs were separated into four fractions on a SilicAr column as follows:

Fraction 1—80 ml petroleum either, which elutes HCB and mirex;

Fraction 2—320 ml petroleum ether, which elutes PCBs and DDE;

Fraction 3—275 ml of 15 percent methylene chloride in hexane, which elutes the remaining organochlorine compounds except endrin and dieldrin;

Fraction 4—200 ml of 1 percent acetonitrile + 19 percent hexane in methylene chloride, which elutes endrin and dieldrin.

Residues in 10 percent of the samples were confirmed with an LKB 9000 or Finnigan 4000 series gas-liquid chromatograph-mass spectrometer. Operating conditions for the LKB are listed by Cromartie et al. (*3*). The operating conditions for the Finnigan were: flow rate of 30 ml/minute helium; column of 1.5 percent OV–17/1.95 percent QF–1 on 60–80 mesh Supelcoport; column temperature-programmed at 2°C/minute from 140° to 225°C; separator 235°C; and ion source 300°C.

Residue concentrations were not corrected for recovery, which ranged from 83 to 104 percent. Most tissues were analyzed at a lower limit of quantification of 0.1 ppm for pesticides and 0.5 ppm for PCBs. Residue concentrations are expressed on a wet-weight basis.

Soxhlet extracts were concentrated to dryness for lipid determinations.

Results

RESIDUES IN CARCASSES

Residues of DDE were found most frequently (96 of 105 carcasses analyzed), PCBs were second (detected in 90 carcasses), and dieldrin and TDE (37 and 35 carcasses, respectively) were about equal as third and fourth most frequent (Table 1). Endrin, mirex, toxaphene, and HCB were found least often. At least one organochlorine was found in each carcass, except for six chicks (three green herons and three snowy egrets) found dead in a Maryland heronry (Table 2).

Organochlorine concentrations were almost always higher in adult herons than in chicks and fledged immature birds (Table 2). DDE and PCBs were present in highest concentrations; they exceeded 100 ppm in two birds each. A black-crowned night heron from Nevada contained 170 ppm DDE and a great blue heron from Virginia had 130 ppm DDE in the carcass. One of the great blue herons taken at Lake St. Clair, Michigan, had 120 ppm PCBs in the carcass, and a black-crowned night heron from Wisconsin contained 110 ppm PCBs. Several other herons each contained at least 20 ppm DDE or PCBs, or both.

The highest concentration of TDE (78 ppm) was in the great blue heron that also contained 130 ppm DDE (Table 2). TDE exceeded 5 ppm in two other great blue herons, one from Florida (5.5 ppm) and one from Minnesota (6.0 ppm).

Dieldrin concentrations exceeded 5.0 ppm in great blue herons from Illinois (7.9 ppm), Florida (6.5 ppm), and Minnesota (5.6 ppm and 5.5 ppm) (Table 2). Those from Illinois and Minnesota apparently died of dieldrin poisoning, based on residue concentrations in the brains (*12*). Dieldrin was present at 5.0 and 8.3 ppm in carcasses of two cattle egrets in Maryland that apparently died of dieldrin poisoning. Eight other birds had more than 2.0 ppm dieldrin in the carcasses.

Heptachlor epoxide, oxychlordane, and *cis*-nonachlor levels usually did not exceed 0.5 ppm in carcasses (Table 2). However, one great blue heron from Minnesota contained 0.80 ppm heptachlor epoxide, and another from Maryland contained 0.53 ppm. A cattle egret from Maryland contained 0.65 ppm heptachlor epoxide in the carcass. A great blue heron from Minnesota contained 0.85 ppm oxychlordane, and one that was collected at Lake Champlain, Vermont, contained 0.75 ppm in the carcass. Three other herons had at least 0.5 ppm oxychlordane. A great blue heron from Virginia and a cattle egret from Maryland were the only birds that had as much as 0.5 ppm *cis*-nonachlor in the carcass.

Concentrations of *cis*-chlordane and *trans*-nonachlor each reached 1.0 ppm in several herons (Table 2). All but two were great blue herons; the others were a black-crowned night heron and a cattle egret. Concentrations of *cis*-chlordane were highest in a great blue heron taken

TABLE 2. *Organochlorine residues in herons*

State (County and Nearest Town)[1]	Date	Species[2]	Age[3]	Sex	Weight[4] (g)	Diagnosis[5]	Tissue[6]	Lipid (%)	Residues, ppm Wet Weight													
									DDE	TDE	DDT	Dieldrin	Heptachlor Epoxide	Oxychlordane	*cis*-Chlordane	*trans*-Nonachlor	*cis*-Nonachlor	Endrin	Toxaphene	HCB	Mirex	PBCs
NORTHEASTERN STATES																						
Massachusetts																						
Essex; Parker River NWR	15 Sept. 1972	GH	A	M	226	Paralytic shellfish poisoning(?)	C	3.7	0.45	ND[7]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.65
Same	14 Sept. 1972	BCNH	A	F	775	Paralytic shellfish poisoning(?)	C	2.5	6.8	0.11	ND	ND	ND	ND	ND	0.12	ND	ND	ND	ND	ND	6.3
Vermont																						
Franklin; Highgate	5 Aug. 1970	GBH[8]	I	F(?)	1965	Shot	C	4.6	1.1	0.23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.60
Franklin; Swanton	11 Aug. 1970	GBH[8]	?	F	1130	Shot	C	0.7	1.3	ND	ND	ND	ND	0.75	0.58	ND	ND	ND	ND	ND	ND	0.90
Grand Isle; South Hero	6 Aug. 1970	BCNH[8]	I	M	648	Shot	C	5.6	1.5	0.58	0.16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.0
Same	Same	BCNH[8]	I	F(?)	772	Shot	C	5.1	1.1	0.16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.78
Same	Same	BCNH[8]	I	F	192	Shot	C	8.4	3.8	0.60	0.21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	6.5
MID-ATLANTIC STATES																						
Maryland																						
Anne Arundel; West River	11 June 1970	GBH	A	M	2384	Myocarditis; glomerulo-nephritis	C	7.2	36.0	0.22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	44.0
							B	8.2	4.9	0.25	ND	0.45	ND	ND	ND	ND	ND	ND	ND	ND	0.26	7.4
Calvert; Drum Point	17 Aug. 1972	GBH	I	F	1085	Verminous peritonitis	C	0.3	1.6	0.20	ND	0.76	ND	ND	0.10	0.14	ND	ND	ND	ND	ND	6.4
							B	6.9	9.7	1.2	0.16	3.9	0.36	0.24	0.59	1.0	0.28	ND	0.17	ND	ND	36.0
Queen Anne's; Long Marsh Is.	14 June 1969	GH	C	?	82[9]		C	4.0	0.13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Same	Same	GH	C	?	69[9]		C	1.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Same	Same	GH	C	?	69[9]		C	3.2	0.14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Same	Same	GH	C	?	92[9]		C	5.7	0.11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Same	Same	GH	C	?	88[9]		C	4.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Same	Same	GH	C	?	104[9]		C	4.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Same	Same	SE	C	M	311	Pneumonia	C	5.9	0.10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Same	Same	SE	C	?	132[9]		C	6.0	0.28	ND	ND	ND	ND	ND	ND	0.22	ND	ND	ND	ND	ND	0.13
Same	Same	SE	C	?	111[9]		C	1.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Same	Same	SE	C	?	134[9]		C	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Same	Same	SE	C	?	145[9]		C	5.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Same	Same	SE	C	?	144[9]		C	5.0	0.35	ND	ND	ND	ND	ND	ND	0.15	ND	ND	ND	ND	ND	0.13
Talbot; Poplar Is.	July 1966	GBH	I	?	574[9]	Bacterial infection; bone malformation	C	2.3	1.3	0.28	ND	0.53	ND	ND	ND	0.11	ND	ND	ND	ND	ND	0.90
Talbot; St. Michaels	14 Aug. 1973	GBH	I	?	894[9]		C	1.8	0.75	0.14	ND	0.33	ND	ND	ND	0.14	ND	ND	ND	ND	ND	1.1
							B	8.6	0.51	ND	ND	0.25	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.5

TABLE 2. (cont'd). *Organochlorine residues in herons*

State (County and Nearest Town)[1]	Date	Species[2]	Age[3]	Sex	Weight[4] (g)	Diagnosis[5]	Tissue[6]	Lipid (%)	Residues, ppm Wet Weight													
									DDE	TDE	DDT	Dieldrin	Heptachlor Epoxide	Oxychlordane	*cis*-Chlordane	*trans*-Nonachlor	*cis*-Nonachlor	Drin En-	Toxaphene	HCB	Mirex	PBCs
Talbot; Wittman	27 Nov. 1972	GBH	I	F	1642	Verminous peritonitis; impact	C	1.9	0.38	ND	ND	0.13	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.68
Talbot; Royal Oak	14 Apr. 1973	GBH	A	M	1839		C	0.9	39.0	0.85	0.15	2.3	0.53	0.50	1.2	1.7	0.35	ND	ND	0.08	ND	69.0
Talbot; Bozman	25 June 1978	CE	A	M	335	Dieldrin poisoning	C	1.2	7.3	0.21	0.12	8.3	0.65	0.40	0.80	1.7	0.58	ND	0.16	ND	0.18	1.4
							B	7.6	7.4	ND	ND	11.0	0.54	0.52	0.74	1.5	0.54	ND	0.35	ND	ND	1.7
Talbot; Royal Oak	27 June 1978	CE	A	M	265	Dieldrin poisoning	C	0.8	0.23	ND	ND	5.0	ND	ND	0.13	0.28	ND	ND	ND	ND	ND	0.45
							B	7.5	0.53	ND	ND	10.0	0.19	0.11	0.24	0.47	0.15	ND	0.36	ND	ND	1.1
Worcester; South Point	25 June 1969	GE	?	?	458[9]		C	4.4	0.21	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Same	Same	GE	?	?	512[9]		C	5.9	0.18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Virginia																						
Culpeper; Brandy Station	11 Jan. 1976	GBH	?	?	946[9]		C	0.7	0.48	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.78
Fairfax; Mason Neck NWR	31 May 1974	GBH	A	F	1386	Verminous peritonitis; (Dieldrin poisoning?)	C	0.7	8.0	1.2	ND	2.2	0.43	0.28	1.4	1.7	0.5	ND	ND	0.12	ND	18.0
							B	6.9	20.0	2.4	0.19	5.1	0.63	0.66	2.5	1.3	1.0	0.22	0.22	0.18	0.20	93.0
James City; Jamestown	1970	GBH	A	F	1432	Verminous peritonitis; (Dieldrin poisoning?)	C	1.6	130.0	78.0	0.53	3.8	0.48	ND	ND	2.5	0.33	ND	ND	0.13	ND	45.0
							B	7.8	62.0	22.0	ND	8.9	0.25	0.23	2.3	ND	0.27	0.19	ND	0.11	ND	56.0
James City; Williamsburg	12 Apr. 1972	GBH	A	M	2176	Verminous peritonitis	C	0.2	5.0	1.8	ND	1.2	0.11	0.10	0.50	0.73	0.24	0.19	ND	ND	0.19	7.8
Rappahannock River	16 Mar. 1973	GBH	A	F	2348	Choking	C	19.0	5.3	0.40	0.40	0.35	ND	ND	0.15	0.35	ND	ND	ND	ND	ND	7.0
							B	6.6	0.30	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.78
SOUTHEASTERN STATES																						
Alabama																						
Mobile; Chickasaw	22 July 1970	GH[8]	I	F	184	Shot	C	1.3	0.68	ND	ND	0.25	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.60
Same	21 July 1970	GH[8]	A	M	226	Shot	C	4.0	2.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	9.5
Same	Same	GH[8]	A	F	219	Shot	C	6.4	0.70	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.2
Same	Same	GH[8]	A	F	202	Shot	C	2.1	2.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.62
Same	Same	LBH[8]	I	F(?)	314	Shot	C	6.6	0.35	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.50
Same	Same	LBH[8]	I	F	328	Shot	C	2.9	0.45	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.50
Same	Same	LBH[8]	I	M	358	Shot	C	2.3	0.43	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.58
Same	Same	LBH[8]	I	F	296	Shot	C	2.2	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.50
Same	Same	LBH[8]	I	M	348	Shot	C	2.3	0.45	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.11	<0.50
Same	Same	LBH[8]	I	F	267	Shot	C	1.3	0.25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.50
Same	Same	CE[8]	A	F	368	Shot	C	2.3	0.35	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.50
Same	22 July 1970	SE[8]	I	M	180	Shot	C	0.4	0.38	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.50

TABLE 2. (cont'd). *Organochlorine residues in herons*

State (County and Nearest Town)[1]	Date	Species[2]	Age[3]	Sex	Weight[4] (g)	Diagnosis[5]	Tissue[6]	Lipid (%)	Residues, ppm Wet Weight												
									DDE	TDE	DDT	Dieldrin	Heptachlor Epoxide	Oxychlordane	*cis*-Chlordane	*trans*-Nonachlor	*cis*-Nonachlor	Endrin	Toxaphene	HCB	Mirex	PBCs
Same	21 July 1970	LH[8]	I	F	299	Shot	C	1.4	3.0	0.13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.50
Same	22 July 1970	LH[8]	I	F	252	Shot	C	2.2	0.12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.50
Same	20 July 1970	BCNH[8]	I	F	553	Shot	C	1.6	0.60	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.50
Same	Same	BCNH[8]	I	F	643	Shot	C	8.2	0.65	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.50
Same	Same	BCNH[8]	I	M	596	Shot	C	2.2	0.68	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.50
Same	Same	BCNH[8]	I	F	634	Shot	C	3.6	0.65	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.50
Same	Same	BCNH[8]	I	M	595	Shot	C	1.6	0.95	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.50
Same	21 July 1970	YCNH[8]	A	F	747	Shot	C	7.1	1.9	0.15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.50
Same	20 July 1970	YCNH[8]	I	F	589	Shot	C	1.4	0.35	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.50
Same	Same	YCNH[8]	I	F	550	Shot	C	2.3	0.25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.50
Florida																					
Dade; Biscayne Bay	15 Feb. 1973	GBH	I	M	1825	Pneumonia	C	1.7	20.0	5.5	ND	6.5	0.30	0.19	1.7	3.0	0.40	ND	ND	ND	ND	3.0
							B	6.8	8.0	2.0	0.15	3.9	ND	0.17	0.75	1.0	0.34	ND	0.71	ND	ND	4.1
Monroe; Everglades NP	1 Feb. 1973	GBH	A	M	1674	Pneumonia; nephritis	C	2.6	4.3	ND	ND	ND	ND	ND	ND	0.17	ND	ND	ND	ND	ND	6.0
							B	7.8	2.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.8
Same	28 Feb. 1973	GBH	A	M	1624	Dieldrin poisoning(?)	C	0.8	12.0	1.1	0.11	4.5	0.13	ND	0.35	0.70	0.19	ND	ND	ND	ND	22.0
							B	8.4	28.0	1.5	0.21	6.6	0.26	0.20	0.76	0.87	0.38	0.20	0.23	ND	0.17	80.0
Louisiana																					
Cameron; Sabine NWR	2 July 1971	LBH[8]	I	M	269		C	7.5	0.14	ND	ND	0.40	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.50
Same	Same	GE[8]	I	M	822		C	3.6	0.11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.50
Same	Same	GE[8]	I	F	778		C	5.4	0.15	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.50
Same	Same	SE[8]	I	F	335		C	5.1	0.13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.50
Same	Same	LH[8]	I	M	180		C	0.5	0.11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	<0.50
North Carolina																					
Hyde; Mattamuskeet NWR	4 Feb. 1976	GBH	A	?	?	DDT poisoning	B	5.1	62.0	21.0	20.0	0.83	0.20	0.79	0.83	2.7	0.93	ND	ND	ND	ND	130.0
GREAT LAKES STATES																					
Illinois																					
McHenry; Harvard	17 June 1977	GBH	A	M	?	Dieldrin poisoning	C	1.1	1.4	ND	ND	7.9	0.19	0.13	0.23	0.45	0.14	ND	ND	ND	ND	3.2
							B	7.2	5.3	0.10	ND	12.0	0.30	0.50	0.33	0.60	0.20	ND	ND	ND	ND	1.3
Michigan																					
St. Clair; Dickinson Is.	22 May 1970	GBH[9,10]	A	M	2830	Shot	C	7.0	26.0	0.79	ND	0.85	ND	0.54	1.8	ND	0.14	ND	ND	1.3	ND	120.0
Same	Same	GBH[9,11]	A	F	2040	Shot	C	4.8	23.0	2.3	ND	0.43	ND	0.15	0.55	ND	0.11	ND	ND	0.18	4.5	8.8
Same	Same	GBH[9,12]	A	M	2724	Shot	C	5.6	14.0	0.53	ND	0.16	ND	ND	0.15	ND	ND	ND	ND	ND	3.0	7.8
Same	Same	GBH[9]	A	M	2380	Shot	C	7.4	6.5	0.74	ND	3.8	ND	0.15	0.79	ND	0.12	ND	ND	0.37	ND	27.0

TABLE 2. (cont'd). *Organochlorine residues in herons*

State (County and Nearest Town)[1]	Date	Species[2]	Age[3]	Sex	Weight[4] (g)	Diagnosis[5]	Tissue[6]	Lipid (%)	Residues, ppm Wet Weight													
									DDE	TDE	DDT	Dieldrin	Heptachlor Epoxide	Oxychlordane	*cis*-Chlordane	*trans*-Nonachlor	*cis*-Nonachlor	Endrin	Toxaphene	HCB	Mirex	PBCs
Wayne; Stony Is.	23 May 1970	GE[8]	A	F	1020	Shot	C	9.2	8.5	0.68	ND	0.45	ND	ND	0.21	ND	ND	ND	ND	ND	ND	9.0
Same	Same	BCNH[8]	A	M	908	Shot	C	10.1	6.4	1.4	ND	0.50	ND	ND	0.15	ND	ND	ND	ND	0.13		15.0
Same	14 Aug. 1973	GBH	A	M	1852	Shot	C	0.8	2.1	ND	0.14	0.19	ND	ND	0.15	ND	ND	ND	ND	ND	ND	ND
							B	4.5	0.76	ND	ND	0.11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Same	Same	GBH	I	F	1728	Shot	C	13.3	0.74	ND	ND	0.15	ND	ND	0.11	ND	ND	ND	ND	ND	ND	2.2
							B	4.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Same	Same	GBH	I	F	1781	Shot	C	14.6	0.75	ND	ND	0.14	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.1
							B	4.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Minnesota																						
Benton; St. Cloud	14 May 1973	GBH	A	F	1427	Dieldrin poisoning	C	0.5	0.63	ND	ND	5.6	ND	ND	ND	ND	ND	ND	ND	ND	0.19	1.4
							B	7.1	1.0	ND	ND	14.0	ND	0.14	ND	ND	ND	0.19	ND	ND	0.18	1.1
Big Stone; Ortonville	11 May 1974	GBH	A	M	2728		C	0.5	3.6	ND	0.44	ND	ND	ND	0.12	0.24	ND	ND	0.15	ND	ND	5.2
Grant; Pelican Lake	14 June 1975	GBH	I	M	1124		C	2.5	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.50
							B	4.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.59
Same	21 June 1976	GE	A	M	795		C	7.3	0.18	ND	0.13	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.95
							B	5.0	ND	ND	0.10	ND	ND	ND	0.11	ND	ND	ND	ND	ND	ND	0.63
Same	Same	GE	A	M	815		C	4.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.30
							B	—[18]	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.29
Kandiyohi; Big Kandiyohi Lake	30 Mar. 1975	GBH	A	M	1930		C	0.6	2.5	ND	ND	0.25	ND	ND	ND	0.12	ND	ND	0.12	ND	0.13	18.0
							B	7.2	10.0	ND	0.39	1.3	0.39	0.34	ND	0.46	0.10	ND	0.44	ND	0.24	54.0
Pope; Lake Johanna	22 June 1975	GBH	A	M	1617	Dieldrin poisoning	C	0.9	23.0	0.40	0.17	3.5	0.80	0.35	0.24	0.65	0.14	ND	ND	ND	ND	2.8
							B	7.1	42.0	0.25	0.30	9.2	1.9	0.87	0.41	1.1	0.25	ND	ND	ND	ND	4.6
Same	Same	GBH	C	M	55		C	0.8	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.75
							B	—[18]	0.68	ND	ND	ND	ND	ND	0.39	ND	ND	ND	ND	ND	ND	2.2
Same	Same	GBH	C	M	63		C	0.6	0.58	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.14	ND	ND	6.5
							B	—[18]	1.3	ND	ND	ND	ND	ND	0.35	ND	ND	ND	0.39	ND	ND	8.7
Same	Same	GBH	C	M	873		C	0.4	0.19	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.68
							B	5.3	0.55	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.5
Same	Same	GE	C	F	135		C	0.8	0.22	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.83
							B	—[18]	0.47	ND	ND	ND	ND	ND	0.51	ND	ND	ND	ND	ND	ND	2.1
Same	Same	GE	C	M	293		C	0.6	0.13	ND	0.75	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.22
							B	—[18]	0.26	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.60
Same	22 June 1976	GBH	C	F	673		C	0.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.43
							B	5.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.57
Same	Same	GBH	C	F	1212		C	2.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.40
							B	6.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Same	Same	GBH	C	F	844		C	0.5	0.14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
							B	4.3	0.43	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.66
Stearns; St. Joseph	13 Apr. 1972	GBH	A	F	1486		C	0.8	34.0	1.4	ND	0.83	ND	ND	0.38	ND	0.10	0.30	ND	ND	6.0
							B	8.5	82.0	1.1	0.24	1.3	0.13	0.16	0.53	ND	ND	0.23	0.74	ND	ND	5.9
Stearns; Sartell	16 Apr. 1972	GBH	A	M	1740	Endrin poisoning	C	0.3	3.8	0.53	ND	1.0	0.23	0.10	ND	0.21	ND	0.55	ND	ND	ND	3.0
							B	7.1	3.0	0.34	0.11	1.2	0.30	0.14	ND	0.21	ND	0.86	ND	ND	ND	2.5
Stearns; Cold Spring	9 May 1972	GBH	A	M	1668	Dieldrin poisoning	C	0.3	3.0	0.11	ND	5.5	ND	0.85	ND	0.14	ND	0.12	ND	ND	ND	30.0
							B	7.2	5.5	0.14	ND	14.0	0.24	ND	0.13	0.33	ND	0.35	ND	0.17	ND	53.0
Stearns; Belgrade	14 May 1973	GBH	A	M	1656		C	0.8	26.0	6.0	ND	1.3	0.22	0.13	ND	1.2	0.11	0.23	0.50	ND	4.0	8.5
							B	6.9	24.0	4.0	ND	1.0	0.29	0.21	ND	1.3	0.11	0.38	0.82	ND	2.9	7.0

Wisconsin																					
Brown; Green Bay	3 Aug. 1978	BCNH	A	M	?		C	5.0	18.0	0.50	0.20	0.83	0.40	0.68	0.43	1.0	0.30	0.23	ND	ND	ND	110.0
							B	7.2	3.4	ND	ND	0.21	ND	0.14	ND	ND	ND	ND	ND	ND	ND	30.0
Dane; Belleville	15 May 1979	GBH	A	M	1525	Dieldrin poisoning(?)	B	7.1	31.0	1.0	0.27	6.0	1.5	0.91	1.4	2.7	1.1	0.19	0.67	0.20	0.69	85.0
Kenosha; Brighton	1 May 1978	GBH	A	M	?	Endrin poisoning(?); trauma	C	0.3	7.5	0.35	ND	1.2	0.28	0.12	0.33	0.40	0.28	0.20	0.28	ND	0.95	15.0
							B	6.3	16.0	0.54	ND	2.4	0.36	0.22	0.42	0.96	0.40	0.60	0.78	0.18	0.94	56.0
Sheboygan; Sheboygan Falls	18 Dec. 1976	GBH	A	M	1780		B	6.5	7.1	0.15	0.07	ND	ND	ND	0.11	0.12	0.04	ND	ND	ND	ND	220.0
CENTRAL AND WESTERN STATES																					
California																					
Imperial; El Centro	29 July 1978	GE	A	M	1200		C	1.2	28.0	1.9	0.40	3.3	ND	ND	0.55	0.78	0.17	0.30	0.58	0.18	ND	3.8
							B	7.4	22.0	1.2	0.30	3.7	ND	ND	0.28	0.78	0.13	0.42	0.54	0.20	ND	2.4
Nebraska																					
Harlan; Alma	8 May 1978	CE	A	F	210	Dieldrin poisoning(?)	C	0.5	15.0	0.15	ND	3.0	ND	ND	ND	ND	ND	ND	0.11	ND	ND	ND
							B	3.4	22.0	ND	0.11	5.6	ND	ND	ND	ND	ND	ND	0.28	ND	ND	ND
Nevada																					
Elko; Ruby Lake NWR	18 July 1975	BCNH	A	?	464[9]	DDE poisoning(?)	C	0.6	170.0	0.80	0.14	ND	ND	ND	ND	0.10	ND	ND	ND	0.05	ND	1.3
							B	7.5	230.0	ND	1.1	ND	ND	0.13	0.32	ND	ND	ND	0.54	ND	ND	5.4
Same	Same	BCNH	A	?	443[9]		C	3.2	7.3	ND	ND	ND	0.22	0.13	ND	ND	ND	ND	ND	ND	ND	1.0
							B	7.5	5.3	ND	ND	0.15	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.5
Same	Same	BCNH	A	?	414[9]		C	1.2	7.0	ND	ND	0.14	ND	ND	ND	0.11	ND	ND	ND	ND	ND	1.3
							B	7.1	1.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.96
New Mexico																					
Bernalillo; Albuquerque	17 June 1977	SE	C	M	343	Impact; out of nest	C	5.6	0.24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.82
							B	9.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Same	15 June 1977	CE	C	?	166	Same	C	1.9	0.18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.4
							B	6.4	0.14	0.10	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Same	Same	CE	C	M	248	Same	C	2.7	0.44	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.0
							B	4.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Same	Same	CE	C	M	260	Starvation(?)	C	0.8	0.34	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1.7
							B	4.1	0.28	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Same	Same	BCNH	C	M	400	Impact; out of nest	C	2.0	0.74	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	3.0
							B	5.9	0.32	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.0

[1] When appropriate, other identifying locations are shown.
[2] Species are identified by the following abbreviations: GBH = great blue heron; GH = green heron; LBH = little blue heron; CE = cattle egret; GE = great egret; SE = snowy egret; LH = Louisiana heron; BCNH = black-crowned night heron; YCNH = yellow-crowned night heron.
[3] Age is coded as C = chick; I = fledged immature bird; A = adult.
[4] Total body weight, except as noted.
[5] Cause of death is shown when it could be determined.
[6] Tissues include carcass (C) and brain (B).
[7] ND = not detected at the lower limit of quantification.
[8] These specimens analyzed by Method I; residues reported as *cis*-chlordane include *cis*-chlordane and/or *trans*-nonachlor (see Methods). Others were analyzed by Method II.
[9] Carcass weight is shown because total body weight is not known.
[10] Polychlorinated styrene compounds also present in this specimen (see Reichel et al. 1977; their Sample 1).
[11] Polychlorinated styrene compounds also present in this specimen (see Reichel et al. 1977; their Sample 2).
[12] Polychlorinated styrene compounds not detected in this specimen (see Reichel et al. 1977; their Sample 3).
[13] Lipid percentage not determined because of small sample size.

at Lake St. Clair, Michigan (1.8 ppm), and another found dead in Florida (1.7 ppm). The great blue heron from Florida also had the highest concentration of *trans*-nonachlor, 3.0 ppm. The great blue heron from Virginia that contained high residue concentrations of DDE, TDE, and DDT also contained 2.5 ppm *trans*-nonachlor in the carcass.

Endrin was highest (0.55 ppm) in the carcass of a great blue heron from Minnesota that apparently died of endrin poisoning (*12*) (Table 2).

Toxaphene reached 0.50 ppm in one of the great blue herons from Minnesota (Table 2). HCB was highest (1.3 ppm) in a great blue heron collected at Lake St. Clair. Mirex concentrations reached 4.5 ppm in another of the great blue herons from Lake St. Clair and 4.0 ppm in a great blue heron from Minnesota.

RESIDUES IN BRAINS

Concentrations of organochlorines in brains and their relation to those in carcasses have been described in more detail elsewhere (*12*). In summary, most herons that apparenlty died of organochlorine poisoning were great blue herons. Dieldrin was the chemical most often considered responsible for death. All birds that had hazardous or lethal concentrations in the brain were adults.

Brains of 51 herons found dead or moribund were analyzed. Two cattle egrets from Maryland have been analyzed since the earlier data were published (*12*). Residue concentrations in carcasses of other herons were not high enough to warrant analysis of brains. Eight (from Illinois, Nebraska, Maryland, Minnesota, and Wisconsin) probably died of dieldrin poisoning; four others (from Florida and Virginia) had dieldrin concentrations that were clearly hazardous, but dieldrin may not have been the cause of death.

Dieldrin concentrations in the brain (wet-weight basis) were related to the concentrations in the carcass (lipid-weight basis) of 25 herons for which both the brain and carcass were analyzed:

$$\log \text{brain concentration} = \log a + b\ (\log \text{carcass concentration}).$$

Common logarithms were used in the calculations; R^2 was 0.89 (Fig. 1). Substituting the Y intercept (a) and slope of the regression (b) values in the equation, the relationship was:

$$\log \text{brain concentration} = -1.6071 + 0.8721\ (\log \text{carcass concentration}).$$

This equation was used to estimate dieldrin concentrations in the brain of herons for which only the carcass

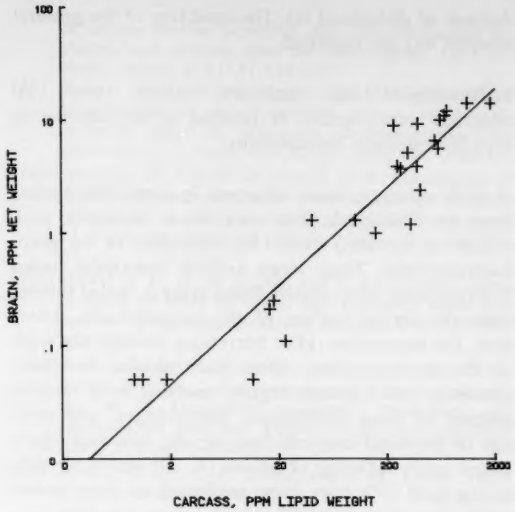

FIGURE 1. *Regression of dieldrin concentration (ppm, wet weight) in the brains of 25 herons on that in the carcass (ppm, lipid weight).* R^2 *is 0.89; the regression equation is: log brain concentration* $= -1.6071 + 0.8721$ *(log carcass concentration).*

was analyzed. The concentration of dieldrin in the brain of one heron collected in Virginia in 1972 (Table 2) was estimated to have been 6.3 ppm, which is in the known lethal range (*19*; W. H. Stickel, personal communication). However, this bird also was infected by nematodes (*Eustrongylides* sp.) that caused verminous peritonitis and contributed to its death.

One heron probably died of endrin poisoning (Minnesota) and another (Wisconsin) had a potentially lethal concentration in the brain. A heron from Nevada had a concentration of DDE in the brain that was clearly hazardous, but perhaps not lethal. However, a heron from North Carolina almost certainly died of DDT poisoning. One heron found dead in Wisconsin had a hazardous, although probably not lethal, concentration of PCBs in the brain.

NECROPSY

Herons dying of dieldrin or endrin poisoning usually exhibited a characteristic set of lesions: The pectoral muscles were greatly atrophied, and the sternal keel bone was quite prominent (a typical "hatchet-breast"); subcutaneous, abdominal, and coronary fat deposits were absent; no grossly visible lesions of necrosis or of hemorrhage were present in the lungs, liver, spleen, or heart. In contrast, the one great blue heron that appeared to have died as the result of toxic levels of DDT and its metabolites had moderate deposits of subcutaneous fat, an enlarged gallbladder, and no obvious

deposits of abdominal fat. The condition of the pectoral muscles was not recorded.

Bacteriological and virological studies (when attempted) were negative or resulted in the isolation of only post-mortem contaminants.

A fairly common lesion observed in great blue herons from the Chesapeake Bay area was a verminous peritonitis (or serositis) caused by nematodes of the genus *Eustrongylides*. These large, reddish nematodes, often 5–10 cm long, were usually found lying in coiled tubules upon the serosal surface of the proventriculus. However, the nematodes (after burrowing through the walls of the proventriculus) often had invaded the liver, intestines, and adjacent organs, resulting in a variable amount of tissue destruction, hemorrhages, and spillage of intestinal contents into the air sacs and "peritoneal cavity." Deaths of herons (*6, 20*) and other fish-eating birds (*7*) have been attributed to these nematodes.

Discussion and Conclusions

The frequency of organochlorine residue occurrence in heron carcasses was similar to that found in eggs of anhingas and wading birds in the eastern United States (*8, 9, 10*). DDE and PCBs are the most common environmental pollutants in herons and in other aquatic birds (see reference *11* for review). Concentrations of organochlorines are usually higher in those birds that feed on other birds or on fish than they are in other species.

Our samples were not collected in a systematic manner, and we usually had only a few specimens of various species from each locality. Therefore, we cannot make statistically valid comparisons of mean organochlorine concentrations in herons throughout the United States. Residue concentrations were relatively high in some birds (especially in adults) from all regions. Great blue herons from Lake St. Clair, Michigan, also had high concentrations of mercury in the carcass (up to 23 ppm) and liver (up to 175 ppm) (*4*). Although most of the herons collected near Mobile Bay, Alabama, were immature birds, residue concentrations in the carcass were lower than anticipated on the basis of organochlorine pesticide use in that general region.

Organochlorine concentrations in many herons were high enough to indicate probable reproductive effects in these individuals and the populations they represent. Eggshell thinning has occurred in several heron species, and embryonic mortality apparently has been caused by organochlorines in some birds (*10, 11*).

Because of the combined effects of their widespread occurrence, high visibility, and dietary exposure to organochlorines, dead or moribund great blue herons apparently were more frequently encountered in the field than were other herons. The great blue heron is one of the most conspicuous and widely distributed heron species in the United States (*13*). Its food habits are somewhat different from the smaller herons, although there is much overlap in prey items because of seasonal and geographic variations in diet. Great blue herons often feed on larger fish of species that tend to accumulate relatively high concentrations of organochlorine residues because they represent higher trophic levels of the food web.

There can be many causes of death, and several of these will result in weight loss and elevated residue concentrations in the brain. Thus, organochlorine residues at death may be at almost any concentration (W. H. Stickel, personal communication). High residue concentrations in some herons may have been secondary to emaciation caused by verminous peritonitis or other health factors. In others, the cause of death was not apparent.

More than 20 percent of the herons found dead or moribund had lethal or hazardous concentrations of organochlorines in the brain (see reference *12* for further discussion). Dieldrin was banned for use in the United States in 1975; DDT was banned in 1972 (*1*). However, each of these chemicals apparently caused mortality of herons years later.

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Organochlorine Residues in Fish: National Pesticide Monitoring Program, 1970–74

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ABSTRACT

As part of the National Pesticide Monitoring Program, the U.S. Fish and Wildlife Service analyzed organochlorine contaminant residues in fish samples collected from about 100 stations each year from 1970 to 1974. During this period, mean residues of DDT and its metabolites declined nationally but remained widespread, and high concentrations continued to be present in areas where DDT use was extensive. Results of interlaboratory crosscheck analyses supported these conclusions, despite interpretation problems posed by intercompound analytical interferences in 1970 and 1971. Temporal trends in PCB residues were less obvious. Highest PCB residues were found in the industrialized areas of the Northwest and Midwest, and traces were present at most stations. Dieldrin and endrin residues remained essentially unchanged during this period; dieldrin residues were widespread and were highest in Hawaii and in areas of the Midwest where aldrin was used extensively. Toxaphene occurrence increased; it was formerly found only in fish from streams draining cotton-farming regions, but residues were detected in 1974 samples from other areas. According to the recommendation of the National Academy of Sciences' Water Quality Criteria, organochlorine residues in freshwater fish may have represented a hazard to piscivorous fish and wildlife at 71 percent of the stations sampled in 1970 and 66 percent in 1974.

Introduction

The National Pesticide Monitoring Program (NPMP) was established in the mid-1960s to assess temporal and geographic contaminant trends in selected environmental components. The U.S. Fish and Wildlife Service (FWS), U.S. Department of the Interior, contributes to this program by periodically determining contaminant levels in freshwater fish, starlings (*Sturnus vulgaris*), and waterfowl. This report presents and summarizes the results of NPMP organochlorine residue analyses conducted on freshwater fish annually from 1970 through 1974. Previous reports in this journal have presented the results of heavy metal analyses through 1973 (*11,33*) and organochlorine results through 1969 (*10,12*).

Organochlorine monitoring by FWS was expanded greatly after 1969 (*15,33*). Initially, only residues of persistent pesticides (aldrin, dieldrin, endrin, lindane, heptachlor and heptachlor epoxide, chlordane (technical), toxaphene, and the *p,p'*-isomers of DDT, DDE, and TDE (DDD) were measured. Polychlorinated biphenyl (PCB) determinations were begun in 1969, reflecting increased national concern over nonagricultural contaminants. Likewise, hexachlorobenzene (HCB) determinations were initiated in 1971, and other compounds were added or deleted as public concerns changed and new methodologies evolved.

Originally, fish were collected annually from 50 stations located at key points in major drainages of Hawaii, Alaska, and the conterminous United States (Fig. 1 and Appendix A, Stations 1–50). Coverage was doubled with the addition of Stations 51–100 in 1970. In 1974, six stations that had histories of low residue levels or were intermittently dry (11, 58, 92, 94, and 95) were deleted from the program and replaced with Stations 101, 102, 105 111, and 113 to better reflect contaminant levels in these watersheds.

Except for fish collected in Hawaii, common names of fish as designated by the American Fisheries Society (*1*) are used throughout the report. Hawaiian fish include tilapia (*Tilapia mossambica*), Cuban limia (*Limia vittata*), and Chinese catfish (*Clarias fuscus*).

Methods of Study

During the course of this investigation, many agencies and laboratories were involved in the collection and analysis of samples and in the interpretation of results. Consequently, detailed descriptions of the methods used are spread among numerous documents, published and unpublished. Although method development has been a source of discontinuity within the program, it has also been a major contribution of NPMP. For these

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reasons, we have chosen to summarize the methods of study.

FIELD COLLECTIONS

Field methods have not changed since last reported (*10,12*); from each station, three to five adult specimens of two representative species, with at least one species replicated, were collected each autumn from 1970 to 1974. Collectors were instructed not to use chemical collecting methods; FWS and State biologists either collected specimens by netting, hook-and-line, or electrofishing, or purchased them from commercial fishermen. After collection each sample was double-wrapped in aluminum foil, frozen, packed in dry ice, and shipped air express to the analytical laboratory. Collectors did not always obtain the preferred number of fish or species that were indicated in the collection guidelines (*15*).

LABORATORY ANALYSES, 1970–71

The Wisconsin Alumni Research Foundation (WARF) was contracted to analyze each 1970 composite sample for DDE, TDE, DDT, dieldrin, aldrin, endrin, BHC (α-isomer), heptachlor, heptachlor epoxide, and PCBs. In 1971, toxaphene was added and BHC was deleted from this list. WARF used procedures detailed in the 1968 revision of the U.S. Food and Drug Administration (FDA), Department of Health and Human Services, Pesticide Analytical Manual (Sections 211 and 311 for nonfatty foods) (*8*), with the following modifications:

Sample Preparation—Each composite sample was thawed, chopped into about 0.45-kg pieces, and ground in a Hobart 84181 food chopper until it appeared to be homogenous. A 200-g portion was then placed in an 8-oz. (236.5-ml) bottle and refrozen.

Extraction and Cleanup—Before analysis, each 200-g sample was thawed and mixed, and a 20-g subsample was weighed into a 150-ml beaker. Each aliquot was transferred to a 1-qt (946-ml) Waring blender jar, blended 2 minutes wtih acetonitrile, and filtered through a plug of glass wool into a 1-liter separatory funnel containing 500 ml tap water. Periodic analyses of reagent blanks ensured that contaminants in tap water remained below detection limits (personal communication, D. L. Hughes, 1980. Raltech Scientific Services, Madison, Wisconsin [formerly WARF]). The sample was then blended about 30 seconds with an additional 50 ml acetonitrile and filtered into the separatory funnel. Petroleum ether (200 ml) was added to the separatory funnel and shaken 2 minutes. After the layers separated, the bottom layer was drawn off. The petroleum ether extract was washed twice more with 600 ml tap water, the water layer was discarded both times, and 10 g Na_2SO_4 was added to the extract. The sample was then filtered into a 300-ml Erlenmeyer flask (the separatory funnel was washed with about 70 ml petroleum ether), concentrated to about 5 ml on a steam bath, and diluted to 25 ml with petroleum ether. A 15-ml subsample was removed and partitioned in acetonitrile-hexane (8). This sample was further partioned on a Florisil column, and analyzed by gas-liquid chromatography (GLC).

For the determination of lipid content, a separate 20-g sample was weighed into a 150-ml beaker and dried at 40°C in a forced-air oven for 36–48 hours. The sample was removed from the oven and ground with 20–50 g Na_2SO_4. The ground sample was placed in a 33-mm $\times$ 94-mm Whatman thimble and extracted 8 hours on a Soxhlet apparatus with 70 ml ethyl ether and 170 ml petroleum ether. The extract was concentrated to 10–15 ml on a steam bath and transferred to a tared 50-ml beaker, and the remaining solvent was evaporated on a steam bath. The beaker was placed in r 40°C oven for 4–6 hours, removed, placed in a desiccator, and weighed, and the amount of fat in the sample was calculated.

Gas-Liquid Chromatography—In the determination of residue concentrations, a 10-g equivalent or less of extract was injected into a Barber-Coleman 5360 Pesticide Analyzer with ^{90}Sr detector, and resulting peak heights were measured. Total PCB concentration was estimated by using Aroclor 1254 as a standard and measuring the peak between *p,p'*-DDE and *p,p'*-DDT. The ¼-in. (6.35-mm) ID $\times$ 4-ft (1.22-m) glass chromatographic column was packed with 5 percent DC-200 on 80–90 mesh Chromport XXX. Operating temperatures were as follows: column, 195°C; injector, 250°C; detector, 240°C.

The flow rate of nitrogen carrier gas was adjusted either to 100 ml/minute or to a rate that resulted in a retention time of 8–10 minutes for *p,p'*-DDT.

Average recovery rates for all compounds were 75–85 percent. No corrections for recovery were made in the residue values. Detection limits for all organochlorine insecticides were reported as 0.005 mg/g.

LABORATORY ANALYSES, 1972–74

Samples collected from 1972 to 1974 were analyzed by the FWS Denver Wildlife Research Center (DWRC) for residues of PCBs and organochlorine pesticides. DWRC procedures differed from those of WARF, as outlined below:

Sample Preparation—Each composite sample was thawed, and then chopped and ground in a Hobart combination chopper and grinder. A 10-g sample aliquot was blended with 50-g powdered Na_2SO_4.

Extraction and Cleanup—The 60-g mixture of the sample plus Na_2SO_4 was placed in a 125-ml glass-stopper Erlenmeyer flask or similar vessel fitted with a liquid-tight Teflon cap or stopper; 50 ml extraction solvent (20 percent acetone in isooctane) was added. The mixture was shaken vigorously at least 15 minutes, and solids were allowed to settle 3–4 minutes. About 14 ml was decanted into a screw-cap culture tube (15- × 100-mm) and centrifuged 3–4 minutes at 1800 rpm. Exactly 2.0 ml clean supernate was withdrawn, evaporated to dryness in a small, tared beaker, and weighed to determine total extractable lipid. Another 10 ml supernate was likewise removed and placed in a 15- × 100-mm culture tube; the solvent was evaporated with a gentle stream of air, and the sample was diluted to 1.0 ml with cyclohexane before gel permeation chromatography (GPC).

For GPC, 0.5 ml cyclohexane solution was withdrawn and placed on top of a 1-cm (ID) × 30-cm glass column packed with SX-2 gel. Not more than 200 mg lipid was placed on the column; proportionately less than 0.5 ml sample was loaded when the 10-ml sample aliquot contained more than 400 mg lipid. The sample was then eluted from the column with cyclohexane at about 4 psi (0.28 kg/cm²) nitrogen pressure, and the first 20 ml eluate (containing the lipids) was discarded. The next 25 ml was collected, rinsed with 10 ml hexane, and concentrated to 1.0 ml in a Kuderna-Danish evaporator for subsequent analysis by GLC.

Gas-Liquid Chromatography—Organochlorine residue concentrations in the GPC eluate were measured by using electron-capture GLC. In 1972, total PCB concentration was estimated by using Aroclor 1254 as a standard. In 1973 and 1974, separate determinations were made for Aroclors 1242, 1254, and 1260 after the GPC eluates were further cleaned up by using silica gel chromatography (described in the following section on Crosscheck Analyses). Columns used were 5 percent QF-1 and 3 percent OV-1. Operating temperatures were 185°C for the column and 300°C for the detector. Injector temperatures were not reported.

Average recovery rates were: aldrin, 68 percent; DDE, 97 percent; dieldrin, 92 percent; endrin, 88 percent; DDT, 97 percent; and PCBs, 81 prcent. Residue determinations were not corrected for recovery.

CROSSCHECK ANALYSES

Each year, 30–50 samples, either known to contain high residues or collected at stations with a history of high residue levels, were selected for crosscheck analysis by the FWS Columbia National Fisheries Research Laboratory (CNFRL; formerly the Fish-Pesticide Research Laboratory). CNFRL methods differed from those of WARF and DWRC, and included the development and use of improved sample cleanup and PCB separation techniques.

Sample Preparation and Extraction—Techniques used by CNFRL to prepare and extract samples remained unchanged from 1970 through 1974. Ground tissue representing each composite sample to be crosschecked was sent from the analytical laboratory to CNFRL, where 20 g sample material was combined with 80 g powdered Na_2SO_4 in a preweighed 1-pt (473-ml) mason jar fitted with a Teflon seal. The mixture was ground to a fine powder with an Oster blender and packed into a chromatographic column (20-mm ID) for extraction with 200 ml 5 percent diethyl ether in petroleum ether (*13*). The extract was retained in a 275-ml Coors porcelain casserole and evaporated to 5 ml.

Sample Cleanup. Gel Permeation Chromatography—Sample cleanup procedures were not changed from 1970 through 1972, essentially following the procedures of Stalling et al. (*29*). Each concentrated sample extract was diluted to 10 ml with cyclohexane. Of this, 1 ml was transferred to a vial and evaporated to dryness for lipid determination. The rest was concentrated to 5 ml, and then diluted to 10 ml with hexane for GPC fractionation on SX-2 gel in an automated processing unit (*31*). Of the sample, 5 ml (but not more than 1 g lipid) was placed on the GPC column. The eluates were collected in 275-ml casseroles, evaporated to near dryness, and diluted to 10 ml before Florisil adsorption chromatography.

The GPC procedure was modified slightly for the 1973 samples. Concentrated sample extracts were diluted 1:1 with ethyl acetate instead of cyclohexane before GPC. After fractionation, the extracts were evaporated to near dryness in casseroles, and then 10 ml isooctane was added. The samples were re-evaporated to near dryness and diluted to 10 ml with petroleum ether for Florisil chromatography. The solvent was again changed for 1974 samples; concentrated extracts were diluted 1:1 with 20 percent toluene in ethyl acetate for GPC fractionation.

Florisil Adsorption Chromatography—From 1970 to 1972, glass columns (20 mm × 40 mm, with glass frits) were prepared by adding, in order, 10 g anhydrous Na_2SO_4, 10 g Florisil (5 percent deactivated), and another 10 g Na_2SO_4. Each prepared column was next washed with 30 ml petroleum ether. When the top of the wash solvent reached the top of the upper Na_2SO_4 layer, half of the GPC concentrate was transferred to the column in 5 ml of the first elution solvent (100 ml 6 percent diethyl ether in petroleum ether). When the sample reached the upper Na_2SO_4 layer, the remaining first elution solvent was added, and the eluate was collected for further separation of pesticides from

PCBs. The second elution solvent was then added (100 ml 15 percent diethyl ether in petroleum ether); this eluate was collected for GLC analysis of strongly polar insecticides (e.g., dieldrin and endrin).

Florisil procedures remained unchanged for 1973 and 1974 samples except for the solvents used. In 1973, extracts were eluted with 6 percent and 11 percent diethyl ether in petroleum ether; in 1974, diethyl ether concentrations were 10 percent and 20 percent.

Pesticide-PCB Separation—For crosscheck samples from 1970 through 1973, Florisil eluates were separated into pesticide and PCB fractions by using a modification (*14*) of Armour-Burke (*3*) silicic acid chromatography. Samples from 1974 were separated with silica gel.

Silicic Acid Separation—Silicic acid was activated with acetonitrile–methylene chloride (40 + 60), the solvent was evaporated, and the adsorbent was uniformly deactivated by adding 2 percent water (by weight). After at least 24 hours, 20 g of this deactivated silicic acid was mixed with 70 ml petroleum ether and poured into a chromatographic column (22 mm ID × 300 mm) with stopcock open (column not allowed to drain completely). The sides of the column were washed with additional petroleum ether, and 2–3 psi (0.14–0.21 kg/cm^2) air pressure was applied to the column. After the silicic acid had settled in the column, it was topped with a layer of about 2 g Na_2SO_4.

The chromatographic properties of each silicic acid batch were routinely checked by measuring percent recoveries of a mixture of DDE, DDT, and Aroclors 1221, 1232, and 1260. When necessary, the amounts of deactivation water were changed until the desired elution profile (10 percent *p,p'*-DDE and 100 percent *p,p'*-DDT in the pesticide fraction) was obtained.

For chromatographic separation, a previously cleaned-up sample extract (GPC and Florisil) was added to a prepared column in 5 ml or less of petroleum ether, and air pressure was applied until the sample solution was level with the Na_2SO_4. The sides of the column were twice washed with 5 ml petroleum ether and allowed to drain level with the Na_2SO_4, and a 275-ml Coors porcelain casserole was placed under the column.

The PCB fraction was eluted from the column with 250 ml of 1 percent benzene in petroleum ether and sufficient air pressure to achieve a 4 ml/minute flow rate until the solvent level in the column was 1 cm from the top of the Na_2SO_4 layer. The elution was stopped, a new casserole was placed under the column, and the pesticide fraction was eluted with 200 ml of 20 percent ethyl ether in benzene. Additional ethyl ether–benzene was added to complete the elution, the casseroles were transferred to a 75°C explosion-proof hot plate in a fume hood, and each fraction was evaporated to 5 ml. The fractions were then rinsed with 5 ml petroleum ether into separate culture tubes, placed in a 55°C Module Blok water bath, and evaporated to 5 ml under nitrogen.

If subsequent GLC of the pesticide fraction revealed the presence of several solvent peaks with retention times less than that of *p,p'*-DDE, an additional cleanup step was used. For removal of impurities, 1 ml 1N NaOH was added to the concentrated pesticide fraction in the culture tube and the mixture was shaken 30 seconds in a Super-mixer (Vortex) and centrifuged, yielding separate organic and inorganic layers. The organic layer was then transferred by pipet to a 25-ml separatory funnel and partitioned by adding 5 ml water. The organic phase was saved for GLC re-analysis.

Silica Gel Separation—The PCBs were separated from pesticides in 1974 crosscheck samples by using silica gel chromatographic techniques modified from Underwood (*32*), in an attempt to reduce the large solvent volumes, pressurized columns, and adsorbent purification steps necessary for silicic acid separation. Small glass columns (10 mm ID) were packed with 4 g Woelm silica gel (activity I) that had been heated overnight at 130°C. PCBs were eluted with 43 ml of 0.5 with 15 ml of 4 percent ethyl acetate in benzene. In other respects, procedures described for the silicic acid method were used.

Gas-Liquid Chromatography—All samples were analyzed with a Beckman GC-4 gas chromatograph equipped with electron-capture detector. For 1970–71 analyses (except BHC), a 4-ft [1.22 m] × 3-mm (ID) glass column was packed with 5 percent DC-200 on 60–80-mesh Gas-Chrom Q; BHC was analyzed by using a 4-ft (1.22-m) × 4-mm (ID) column packed with 3 percent OV-17 on 60–80-mesh Gas-Chrom Q. Typical operating temperatures were: column, 180°C; injector, 220°C; and detector, 240°C. Nitrogen flow was adjusted to yield a γ-BHC retention time of 1 minute. Average recoveries were: dieldrin, 85 ± 5 percent; DDE, 64 ± 5 percent; TDE, 90 ± 5 percent; and DDT, 81 ± 5 percent. Residue determinations were corrected for percent recovery.

DATA HANDLING AND STATISTICAL ANALYSES

Authors used Statistical Analysis System (SAS) programs (*26*), available through the University of Missouri (Columbia) computer system (IBM 370/168), for all statistical analyses. For trend analyses, the following descriptive statistics were computed for each compound, by year: mean (after appropriate transformation), minimum and maximum concentration, and percentage of stations at which each compound was detected.

Lipid values were normalized by using the angular transformation (*28*). Concentration values were normalized by applying the [$\log_{10}$ (residue concentration) + 1.0] transformation before means were computed. Although complete normalization may have been prevented by the presence of zero values, residue data treated in this manner are easier to interpret biologically. For example, small differences should be more important at very low than at high residue levels—an interpretation supporting the use of this transformation (*23*). In addition to descriptive statistics, we computed annual matrices of product-moment correlation coefficients, using percent lipid and transformed residue concentrations, to illustrate trends in the co-occurrence of compounds.

The NPMP data set is highly heterogeneous; many potentially confounding factors had to be considered when the descriptive statistics were computed and interpreted. Specifically, the number of samples from each station varied from year to year, as did the species collected and the sizes and weights of the individual fish making up the composite samples; also some stations were not sampled every year. The artificial weighting of the national annual means caused by unequal sample numbers at different stations was alleviated by computing least-squares annual means (*26*), which were adjusted for the number of observations per cell. The problem of varying sample composition (fish species, age, sex, size, etc.) was ameliorated by computing and examining correlation matrices and descriptive statistics for lipid-weight residue concentrations [ppm wet weight/(percent lipid/100)] in addition to wet-weight concentrations; much fish-to-fish variability in organochlorine residues is related to differing amounts of lipid in the individual specimens (*24*), and hence in our composite samples.

Data from all stations were considered in examining them for annual minima and maxima. However, to accurately reflect temporal trends, only data from stations where at least one sample was collected every year from 1970 to 1974 were included in computing the annual means, percent occurrence, and correlation matrices.

The NPMP fish tissue data represent whole-body residue levels; consequently they are not directly comparable with standards established for human consumption of fish, which are based on residues in edible portions. However, the NPMP data are representative of the contaminant levels to which piscivorous fish and wildlife would be exposed. To evaluate this potential hazard, we used data from all stations to compute percentages of samples meeting or exceeding criteria of the National Academy of Sciences (NAS) and National Academy of Engineers (NAE) (*22*) for the protection of fish-eating wildlife.

Each year's CNFRL crosscheck results were compared with corresponding values reported by the analytical laboratories in several ways. Summary statistics were computed for each laboratory after the data were transformed (as described), and percent occurrence was compared. For each compound, the product-moment correlation between corresponding values from each laboratory was computed to give a general indication of agreement. Deviations between laboratories were compared statistically by two-way analysis of variance for paired comparisons (*28*).

Results and Discussion

THE DATA SET

The 1970–74 NPMP freshwater fish data set includes organochlorine residue concentrations, lipid content, and descriptions of the specimens (species, average length and weight, location of capture) for each of 2,106 composite samples collected from 113 stations. Major drainage basins from all 50 states are represented (Fig. 1; Appendix A). Appendix B is a complete tabulation of the data.

Fish collected for the NPMP represented 71 taxa, of which the five most frequently collected species (carp, channel catfish, largemouth bass, yellow perch, and white sucker) accounted for 46–50 percent of the samples every year (Table 1). The proportional contributions of the five dominant species to that 46–50 percent varied little from year to year.

Of the 113 stations, 74 are represented in the data set by at least one sample each year and could therefore be used in computing national descriptive statistics. This 74-station subset contains 1,604 observations, or 76.2 percent of the samples (Table 1). Within the subset, at least one species was present in each year's collection at 65 (88.8 percent) of the stations; two or more species were common to all years at 32 (43.1 percent) of the stations; and there were three species common to all years at 12 stations (16.1 percent). Temporal trends could be interpreted clearly at a given station only when at least one species was common to all years.

In general, the NPMP freshwater fish data set is heterogeneous with respect to species-station-year continuity. Most of this heterogeneity results from the lack of a single fish species that is common to the major drainages of all 50 states. The carp, an introduced species, comes closest, being taken at 54 percent of the stations sampled (5-year mean) followed by the channel catfish (33 percent), largemouth bass (28 percent), yellow perch (13 percent), and white sucker (11 percent) (Table 1). Collectively, these five species represented 48 percent of the 2,106 samples collected; consequently, they are far from ubiquitous when compared, for example, with duck wings and starlings used in wildlife

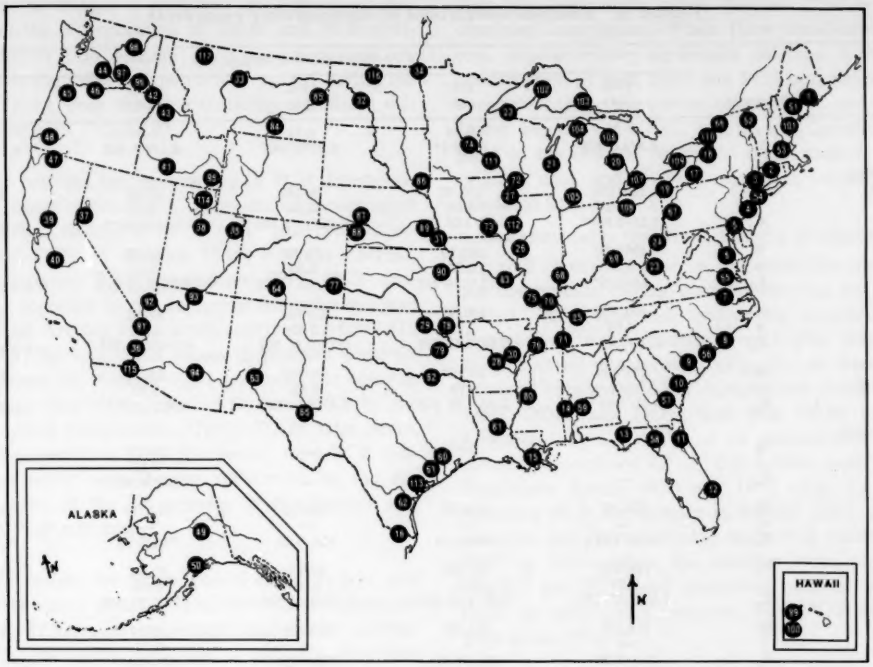


FIGURE 1. *Stations at which freshwater fish were collected for the National Pesticide Monitoring Program* (See Appendix A for descriptions of locations.)

TABLE 1. *Occurrence of the five most frequently collected fish species in the NPMP data set, 1970–74*

		1970		1971		1972		1973		1974		All Years	
Species	Parameter	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Carp	All samples	81	20.6	107	18.3	75	19.2	81	20.2	59	17.6	403	19.1
	All stations	49	49.0	55	58.5	55	56.1	61	61.0	42	43.3	262	53.6
	74 stations[1]	42	56.8	41	55.4	41	62.2	46	62.2	37	50.0	207	55.9
Channel catfish	All samples	41	10.4	66	11.3	36	9.2	43	10.7	37	11.0	223	10.6
	All stations	32	32.0	35	37.2	30	30.6	32	32.0	31	32.0	160	32.7
	74 stations	25	33.8	26	35.1	25	33.8	23	31.1	29	39.2	128	34.6
Largemouth bass	All samples	38	9.6	49	8.5	33	8.5	40	10.0	25	7.5	185	8.8
	All stations	34	33.0	26	27.7	29	30.0	32	32.0	19	19.6	140	28.6
	74 stations	23	31.1	19	25.7	21	28.4	22	29.7	17	23.0	102	27.6
Yellow perch	All samples	21	5.3	28	4.8	22	5.6	21	5.2	25	7.5	117	5.6
	All stations	13	13.0	14	14.9	12	12.2	12	12.0	14	14.4	65	13.3
	74 stations	11	14.9	12	16.2	11	14.9	10	13.5	9	12.2	53	14.3
White sucker	All samples	15	3.8	24	4.1	14	3.6	11	2.7	15	4.5	79	3.8
	All stations	10	10.0	12	12.8	11	11.2	9	9.0	12	12.4	54	11.0
	74 stations	6	8.1	7	9.5	7	9.5	6	8.1	9	12.2	35	9.6
Major species (5)	All samples	196	49.7	274	46.8	180	46.2	196	48.8	161	48.1	1,006	47.8
74-Station Subset[1]	Samples	294	74.6	432	73.8	297	76.2	297	73.9	284	84.8	1,604	76.2
	Stations	74	74.0	74	78.7	74	75.5	74	74.0	74	76.3	370	75.7
All data	Samples	394	100.0	585	100.0	390	100.0	402	100.0	335	100.0	2,106	100.0
	Stations	100	100.0	94	100.0	98	100.0	100	100.0	97	100.0	489	100.0

[1] Stations where at least one sample was collected each year, 1970–74.

residue monitoring (e.g., *34, 35*). Despite the heterogeneity, the fish tissue data are sufficiently continuous, especially within given locations, to reflect temporal and regional trends.

INTERLABORATORY CROSSCHECKS

Results of statistical analyses performed on each year's crosschecks are presented in Table 2. Crosscheck re-

TABLE 2. *Statistical comparisons of interlaboratory crosschecks*

Compound	Statistic	Year and No. of Samples 1970 (40)	1971 (30)	1972 (34)	1973 (38)	1974 (47)
Lipid (%)	r	0.92	0.94	0.74	0.69	0.97
	X_A	8.8/8.6 NS	8.5/9.1*	6.8/7.0 NS	8.1/8.7 NS	8.1/8.4 NS
DDT homologs						
p,p'-DDE	%	100/100	100/97	76/100	79/97	91/100
	r	0.91	0.90	0.74	0.82	0.55
	X_G	1.25/0.86**	0.97/1.05 NS	0.86/1.12 NS	0.55/0.90**	0.73/0.41**
p,p'-TDE	%	100/100	100/97	88/89	61/92	83/96
	r	0.54	0.52	0.96	0.88	0.68
	X_G	1.08/76*	0.72/0.56 NS	0.42/0.44 NS	0.27/0.22 NS	0.31/0.28 NS
p,p'-DDT	%	100/100	100/97	62/100	87/92	34/85
	r	0.58	0.83	0.91	0.82	0.36
	X_G	0.74/0.42**	0.56/0.43 NS	0.29/0.35 NS	0.14/0.15 NS	0.10/0.11 NS
Total *p,p'*-DDT	%	100/100	100/97	94/100	89/97	96/100
	r	0.68	0.79	0.92	0.87	0.65
	X_G	3.03/1.94**	2.20/1.88 NS	1.42/1.70 NS	0.82/1.19**	1.09/0.73*
PCB components						
Aroclor 1242	%	—	—	—	21/13	0/0
	r	—	—	—	0.13	0.0
	X_G	—	—	—	0.40/0.06*	0/0
Aroclor 1248	%	NA/58	NA/73	NA/48	NA/58	NA/9
	r	—	—	—	—	—
	X_G	NA/1.97	NA/4.13	NA/1.16	NA/0.96	NA/0.15
Aroclor 1254	%	100/100	97/100	67/91	42/92	79/91
	r	0.84	0.71	0.78	0.63	0.68
	X_G	3.68/3.07 NS	3.89/3.68 NS	2.78/2.40 NS	1.38/1.72 NS	2.14/1.23**
Aroclor 1260	%	NA/68	NA/93	NA/79	21/97	28/57
	r	—	—	—	0.02	−0.03
	X_G	NA/2.20	NA/1.81	NA/1.10	0.17/0.85**	0.10/0.44**
Total PCB	%	100/100	97/100	67/91	68/97	85/91
	r	0.82	0.90	0.81	0.76	0.69
	X_G	3.68/6.19**	3.89/10.23**	2.78/4.77**	2.28/3.66**	2.46/1.75*
Other insecticides						
Dieldrin	%	98/100	100/100	55/97	58/92	38/96
	r	0.85	0.94	0.89	0.82	0.34
	X_G	0.16/0.25**	0.20/0.27	0.07/0.11*	0.07/0.20 NS	0.13/0.05 NS
Endrin	%	33/35	47/60	15/42	13/45	4/81
	r	0.89	0.70	0.46	0.12	−0.04
	X_G	0.01/0.01 NS	0.02/0.04*	0.01/0.03*	0.01/0.11*	0.01/0.03 NS
BHC	%	37/29	NA/43	NA/30	NA/63	NA/96
	r	0.55	—	—	—	—
	X_G	0.19/0.13 NS	NA/0.05	NA/0.02	NA/0.03	NA/0.07
Toxaphene	%	NA	13/26	18/36	13/34	13/21
	r	—	0.75	0.89	0.85	0.67
	X_G	—	< 0.01/0.56*	0.53/0.68 NS	0.37/0.63 NS	0.33/0.30 NS

NOTE: r = product-moment correlation between corresponding values; % = percent occurrence; X_A = mean (angular transformation); and X_G = mean (log transformation). For percent and means, values to the left of slant lines are for the analytical laboratories, and values to the right are for CNFRL crosschecks. Significance of differences between laboratories (two-way analysis of variance for paired comparisons): **$P < 0.01$; *$0.01 < P < 0.05$; NS, $P > 0.05$; NA, not analyzed; NC, not compared.

sults for individual samples are tabulated with corresponding monitoring data in Appendix B.

Crosscheck results revealed several types of disagreements between results of the laboratories. Most obvious was the consistent overestimation of DDT components by WARF for 1970 and 1971 samples containing PCB residues (Table 2; Appendix B). During these two years, WARF also significantly underestimated total PCB residues, no doubt as a result of their not separating PCBs from pesticides before GLC, and analyzing only for total PCBs as Aroclor 1254. WARF also reported DDT residues in 100 percent of the cross-checked samples from both 1970 and 1971; CNFRL reported 100 percent in 1970, and 97 percent in 1971. Quantitative interpretation of chromatograms for toxaphene and chlordane, multi-component compounds with GLC peaks that correspond to DDT, was not initiated for routine sample analyses until 1972. Consequently, additional interference with DDT determinations from toxaphene and chlordane was likely in 1970 and 1971 (*4, 16, 19*); DDT concentrations in samples containing significant residues of toxaphene or chlordane were probably overestimated by WARF. Beginning in 1972, when toxaphene and chlordane peaks were measured by DWRC, interference from those com-

pounds was no longer a problem. As a result of this change and the incorporation of silicic acid PCB-pesticide separation into routine analyses, interlaboratory agreement in the DDT components improved during the period 1972–74, even though statistically significant differences persisted (Table 2).

Agreement between the laboratories in PCB determinations was generally acceptable, given the methodological inconsistencies. Before 1973, WARF and DWRC reported total PCBs as Aroclor 1254; whereas CNFRL measured separate PCB components. Total PCB concentrations reported by the analytical laboratories agree well with the Aroclor 1254 levels reported by CNFRL, even though the total PCB values themselves disagree; CNFRL values for Aroclor 1254 are about the same or slightly lower than those reported for total PCB by the other analytical laboratories (Table 2). In later years, overall agreement was generally better; total PCB residues agree fairly well, despite differences in the apparent abilities of the laboratories to discriminate and quantitate PCB mixtures.

Crosscheck results for aldrin and dieldrin, endrin, and BHC (1970 only) indicated relatively close agreement (Table 2). Differences in percent occurrence resulted from each laboratory reporting a different detection threshold; these compounds were found in some samples by CNFRL at very low concentrations (Appendix B). CNFRL usually reported higher concentrations of dieldrin, endrin, and BHC than did the other laboratories (Table 2). Part of this apparent enhancement may have been a result of correction for percent recovery by CNFRL—a correction not made by the other laboratories.

Although WARF began analyzing for toxaphene in 1971, residues could not be compared quantitatively until 1972 (Table 2). Agreement between laboratories was acceptable in 1972, 1973, and 1974; minor differences in percent occurrence again were related to differences in detection threshold. However, all reported toxaphene values should be considered estimates; this insecticide is a complex and highly variable mixture of many chlorinated terpene compounds, and residues are difficult to quantify by conventional packed-column GLC.

In general, crosscheck analyses revealed acceptable agreement between the analytical laboratories and CNFRL for most compounds, considering the methodological differences. Even the 1970–72 total DDT residues can be used for comparisons when the following conditions are met: PCB residues are low and predominantly Aroclor 1254; percent lipid values are similar; and chlordane and toxaphene residues are near or below the detection limit. Similarly, total PCB residues are comparable when Aroclor 1254 is the predominant component. When these conditions are not met, interlaboratory agreement declines. Furthermore, confirmation of both DDT and PCB complexes requires complete sample separation before GLC; no correction factor based on CNFRL results can therefore be applied to the original data. For these reasons, both the original data and the corresponding crosschecks are tabulated in Appendix B.

GEOGRAPHIC AND TEMPORAL TRENDS IN RESIDUE LEVELS

Figure 2 represents a series of correlation matrices for the compounds during each monitoring year. As expected, wet-weight and lipid-weight concentrations of these lipophilic compounds were highly correlated ($r > 0.7$) in all comparisons (Fig. 2), as were the correlations between additive components (total DDT vs. TDE, DDE, and DDT, and total PCBs vs. various Aroclors). Total DDT and its components were significantly correlated ($P < 0.01$) with total PCB concentrations during 1970 and 1971 (Fig. 2), probably reflecting PCB interference in WARF DDT determinations for samples containing high PCB residues. From 1972 to 1974, when the samples were analyzed by DWRC and PCB and pesticide fractions were separated on silicic acid columns, PCB-DDT correlations were lower (Fig. 2).

Significant correlations also occurred among some of the agricultural compounds that tended to be used together. Toxaphene and the DDT homologs, for example, were positively correlated, as were the cyclodiene insecticides (dieldrin, endrin, heptachlor) in some years. Conversely, toxaphene and PCBs were negatively correlated, as might be expected when one measures the co-occurrence of agricultural and industrial compounds. For other residues, sporadically high intercorrelations may be only an artifact of uniformly low levels, especially when many zero values co-occur; such artifacts probably occurred for lipid-weight vs. wet-weight concentrations of heptachlor and Aroclor 1242, for example.

Table 3 presents the annual minimum, maximum, and geometric mean residue concentrations, and annual percent occurrence by station for 13 compounds. These data suggest a general downward trend in average residue concentrations and percent occurrence of DDT and its metabolites from 1970 through 1974. However, the maximum concentrations of the DDT homologs encountered each year either remained high or increased (e.g., DDE, the principal metabolite of DDT), indicating the continued presence of rather heavily contaminated areas despite a general downward trend.

The true magnitude of the downward trend in DDT residues is difficult to interpret because many of the 1970 and 1971 values reported for DDT and TDE

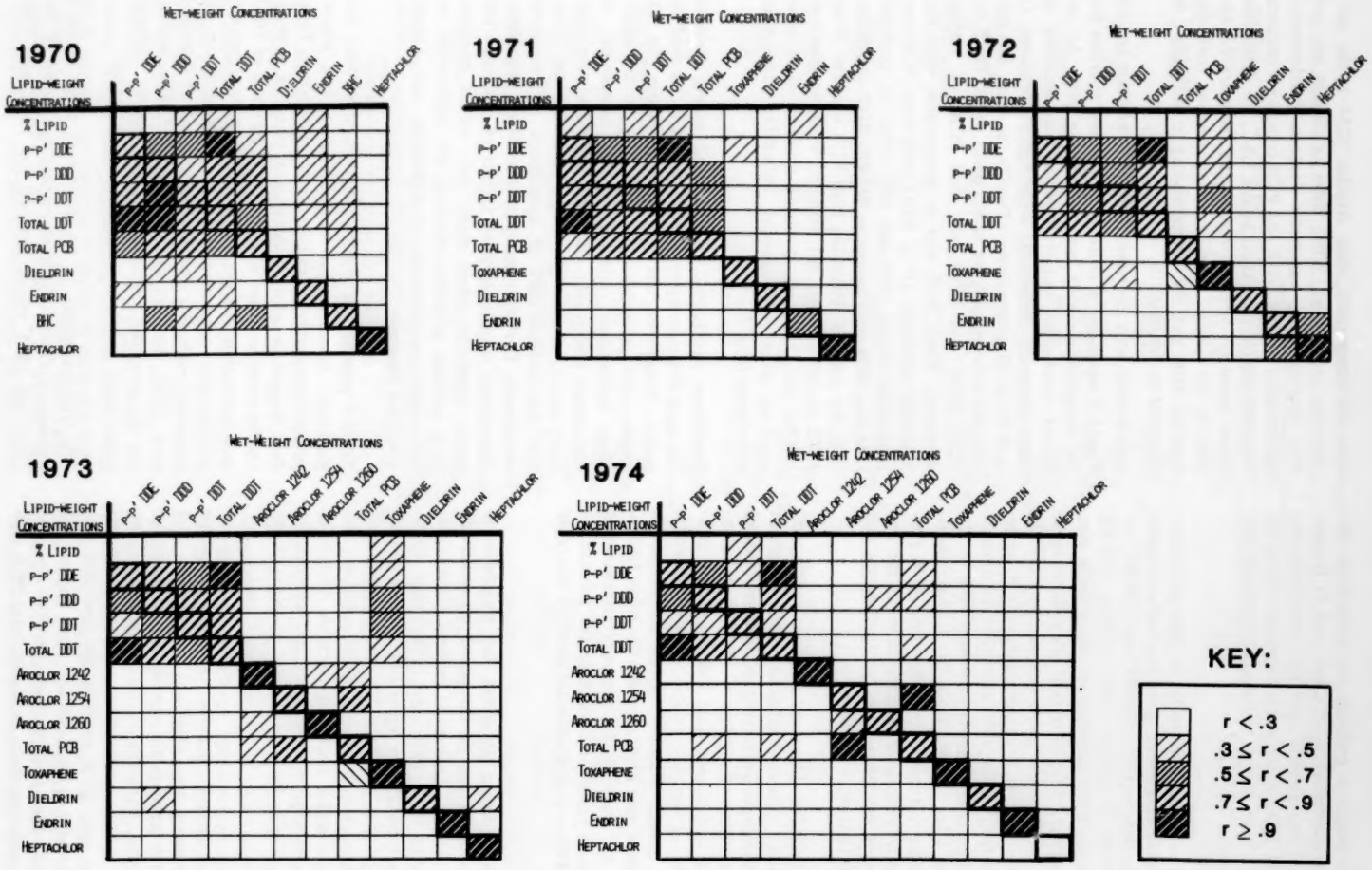


FIGURE 2. *Intercorrelations among organochlorine residues in freshwater fish, 1970–74.*
Wet-weight concentrations above principal diagonal, lipid-weight concentrations below. Coefficients on the principal diagonal illustrate correlations between corresponding wet-weight and lipid-weight values. Right-sloping lines, positive correlations; left-sloping lines, negative correlations.

TABLE 3. *Geometric mean, minimum, and maximum wet-weight and lipid-weight residues (μg/g, whole fish), 1970–74, and percent of stations showing detectable residues in at least one sample*

Compound and Statistic	1970		1971		1972		1973		1974	
	Wet	Lipid	Wet	Lipid	Wet	Lipid	Wet	Lipid	Wet	Lipid
p,p'-DDE										
min.	0.01	0.2	ND	ND	ND	ND	ND	ND	ND	ND
max.	7.27	361.8	8.27	236.7	15.0	211.3	32.0	581.8	12.0	517.6
X_G	0.47	6.5	0.35	4.9	0.40	5.2	0.30	3.7	0.37	4.4
%	100.0		98.6		97.2		95.9		95.9	
p,p'-TDE										
min.	0.01	0.13	ND	ND	ND	ND	ND	ND	ND	ND
max.	5.86	208.0	4.04	145.0	7.60	166.7	14.0	90.9	9.0	102.3
X_G	0.34	4.8	0.25	3.6	0.18	2.2	0.12	1.1	0.14	1.3
%	100.0		98.6		97.3		71.6		78.4	
p,p'-DDT										
min.	0.01	0.13	ND	ND	ND	ND	ND	ND	ND	ND
max.	3.72	123.3	5.34	80.9	6.47	55.8	11.0	200.0	2.0	26.9
X_G	0.27	3.6	0.19	2.7	0.11	0.9	0.07	0.5	0.05	0.4
%	100.0		98.6		74.3		41.9		48.6	
Total *p,p'*-DDT and metabolites										
min.	0.03	0.53	ND	ND	ND	ND	ND	ND	ND	ND
max.	13.02	402.7	13.13	401.7	21.8	307.0	48.0	872.7	16.2	517.6
X_G	0.98	15.1	0.73	11.2	0.64	9.0	0.44	5.4	0.52	6.2
%	100.0		98.6		100.0		100.0		97.3	
Aroclor 1242										
min.	NA		NA		NA		ND	ND	ND	ND
max.	—		—		—		15.0	180.7	4.5	95.5
X_G	—		—		—		0.11	0.3	0.01	< 0.1
%	—		—		—		13.5		5.4	
Aroclor 1254										
min.	NA		NA		NA		ND	ND	ND	ND
max.	—		—		—		25.0	709.7	75.0	1058.8
X_G	—		—		—		0.58	3.7	0.82	7.0
%	—		—		—		62.2		86.5	
Aroclor 1260										
min.	NA		NA		NA		ND	ND	ND	ND
max.	—		—		—		5.3	92.3	5.9	78.1
X_G	—		—		—		0.08	0.3	0.06	0.3
%	—		—		—		20.3		18.9	
Total PCB[1]										
min.	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
max.	24.8	1386.7	41.0	885.7	30.0	791.7	25.0	812.5	75.0	1058.8
X_G	-- 1.20	17.8	1.03	13.9	1.20	11.7	0.78	5.7	0.95	9.7
%	98.6		98.6		83.8		70.3		93.2	
Toxaphene[2]										
min.	NA		ND	ND	ND	ND	ND	ND	ND	ND
max.	—		0.01	1.4	38.0	718.0	31.0	1900.0	51.0	655.2
X_G	—		< 0.01	< 0.1	0.13	0.3	0.17	0.5	0.17	0.5
%	—		13.5		9.5		12.2		14.9	
Dieldrin										
min.	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
max.	1.35	17.1	4.17	94.4	1.40	42.4	1.20	47.4	9.10	113.8
X_G	0.08	1.1	0.07	0.9	0.07	0.8	0.05	0.6	0.09	0.6
%	100.0		100.0		81.1		70.3		52.7	
BHC[4]										
min.	ND	ND	NA		NA		NA		NA	
max.	3.70	69.8	—		—		—		—	
X_G	0.08	0.9	—		—		—		—	
%	100.0		—		—		—		—	
Endrin										
min.	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
max.	0.16	1.8	0.82	10.0	0.73	8.6	0.51	5.5	0.21	17.3
X_G	0.01	0.1	0.02	0.2	0.01	0.1	0.01	0.1	< 0.01	< 0.1
%	31.1		82.4		10.8		20.3		2.7	
Heptachlor[5]										
min.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ND	ND
max.	0.40	14.3	1.0	25.6	0.23	2.0	0.05	0.7	ND	ND
X_G	0.01	0.1	0.01	0.1	0.01	0.1	0.01	0.1	0.0	0.0
%	1.4		2.7		6.8		4.1		0.0	
% Lipid										
min.	0.2		0.1		0.1		0.1		0.6	
max.	30.1		24.5		24.1		29.5		24.9	
X_G	5.8		5.6		5.2		5.5		5.8	

NOTE: ND = none detected; NA = not analyzed.
[1] As Aroclor 1254 for 1970–72.
[2] Toxaphene values not quantitative for 1971.
[3] Includes aldrin for 1973–74.
[4] Includes α- and γ-isomers.
[5] Includes heptachlor epoxide.

(and hence, total DDT) were enhanced to an unknown degree by PCB, chlordane, and toxaphene interference. Furthermore, none of the NPMP stations showing evidence of DDT contamination was completely free of PCBs; because the NPMP stations are located on major lakes and rivers, there are no high DDT-low PCB stations to use as "yardsticks." However, DDE quantitation is affected less by failing to separate PCBs from pesticides than is quantitation of TDE and DDT. Note, for instance, that TDE and DDT were more highly correlated with total PCBs than was DDE in 1970 and 1971 (Fig. 2), and that the declines in the means and percent occurrence of DDE were less obvious than the declines for DDT and TDE (Table 3). DDE is formed continuously as the principal breakdown product of DDT. Therefore, stable DDE residues may represent a decline in total environment DDT. These processes are well illustrated, in that the proportion of the total mean *p,p'*-DDT homologs that consisted of DDE increased steadily from 43 percent in 1970 and 1971 to 63 percent in 1972, 68 percent in 1973, and 71 percent in 1974 (Fig. 3). Despite any declines in mean residues, however, DDT and its metabolites remain ubiquitous; as recently as 1974, traces were found in at least one sample at 97 percent of the stations investigated.

As represented by the statistics in Table 3, PCB residues evidenced little change from 1970 to 1974 in either average or maximum concentration or percent occurrence. Like DDT, these compounds have become virtually ubiquitious, occurring at 91 percent of the NPMP stations in 1974.

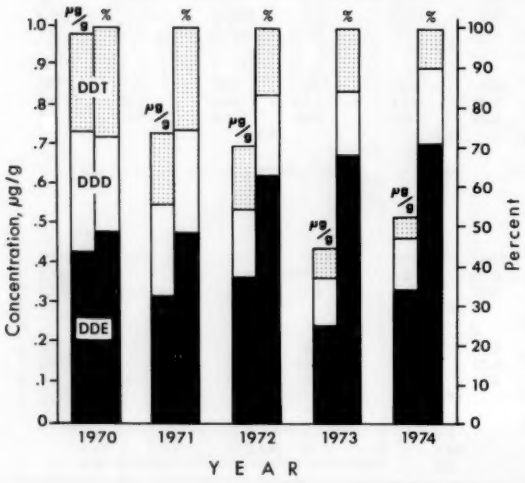


FIGURE 3. *Contributions of three p,p'-DDT homologs to total p,p'-DDT residues in fish tissues, 1970–74.* Left bar of each pair, wet-weight concentration (μg/g); right bar, percent of total.

Toxaphene was first measured in NPMP samples in 1971, and trace quantities (0.01 μg/g or less) were found at 9.5 percent of the stations. After methods of quantitation were improved, average concentrations increased to 0.1–0.2 μg/g and annual maxima reached 30–40 μg/g from 1972 to 1974. Percent occurrence, however, remained essentially unchanged until 1974, when it increased nearly twofold, to 17.6 percent of the stations investigated. These increases in toxaphene concentrations and occurrence from 1970 to 1974 are not surprising; toxaphene had already become the most heavily used agricultural insecticide in the United States by 1971 (*2*), largely as a replacement for DDT in cotton farming.

Average and maximum dieldrin residues showed little change over the period 1970–74 (Table 3). However, the percentage of stations at which dieldrin or aldrin was detected declined from 100 percent in 1970 to 50 percent in 1974 (almost no aldrin was detected; it is rapidly metabolized to dieldrin). This decline may reflect the replacement of aldrin and dieldrin by less persistent soil insecticides, beginning in the late 1960s.

High endrin concentrations were typically found at a few stations each year at about the same level (about 0.1–0.5 μg/g); little or none was found at most stations. Hence, the mean remained consistently low from 1970 to 1974 (Table 3). Changes in percent occurrence probably reflect varying detection thresholds at the analytical laboratories. Maximum wet-weight concentrations remained at or near 0.5 μg/g from 1972 to 1974; these are very high levels, considering toxicity of endrin to fish (*17*).

For the remaining insecticides (BHC and heptachlor), methodological inconsistencies preclude the discernment of temporal trends in the national statistics. BHC, detected at 100 percent of the monitoring stations in 1970 (Table 3), was deleted from the routine analyses beginning in 1971 because of difficulties in resolving the various isomers. Heptachlor, heptachlor epoxide, and several chlordane compounds are rapidly and interchangeably metabolized in natural systems (*21*); hence, the values reported for heptachlor (Table 3, Appendix B) are only estimates. For this reason we also do not report values for chlordane in trend monitoring samples, even though samples were routinely screened for "technical chlordane" (a complex and variable mixture of compounds) from 1970 to 1974.

The lipid content of NPMP fish samples varied little from year to year, but greatly within a year (Table 3). Minimum values were typically 0.5 percent or less,

yearly maxima were 25–35 percent, and means were 5–6 percent.

One group of 77 CNFRL crosscheck samples, representing 15 stations, was used to further examine temporal trends (Table 4). At least one sample from each of these stations was crosschecked every year from 1970 to 1974. All samples were subjected to either silicic acid or silica gel PCB separation and were quantitatively analyzed for toxaphene and chlordane. Reported residues should therefore be free of intercompound interferences. Furthermore, for some of the station-year "cells," two or more samples were crosschecked (Table 4), allowing the computation of variances and more rigorous statistical treatment than could be applied to the NPMP data set as a whole.

Wet-weight and lipid-weight residues of DDE, TDE, DDT, total DDT, total PCB, dieldrin, endrin, and toxaphene were transformed as described previously and analyzed statistically by 2-way analysis of variance (AOVA) for unbalanced data sets, and least-squares means (adjusted for the number of observations per cell) were computed by using the SAS General Linear Models procedure (*26*). The mean for "early" years (1970–72) was then contrasted against the mean for "later" years (1973–74) by using single degree-of-freedom orthogonal comparisons of means.

For wet-weight residues at the 15 stations, "year" main effects were significant only for total DDT ($P < 0.05$), total PCB, ($P < 0.01$), and dieldrin ($P < 0.05$) (Table 5). However, for lipid-weight residues, "year" effects were significant ($P < 0.01$) for all compounds tested except DDE and endrin, but station-year interaction was also significant for toxaphene and dieldrin. Although significant interaction can result from a variety of causes, in this situation it was probably the result of differing temporal trends among the 15 stations. Such a relation would be expected for toxaphene, for example; concentrations remained uniformly low over the 5-year period at some stations, whereas major changes occurred at other locations. As the R^2 values in Table 6 illustrate, relative precision was improved for most compounds when lipid-weight rather than wet-weight residues were compared, an improvement which provides the resolution necessary to detect differences among years for TDE, DDT, dieldrin, and toxaphene (Table 5). Main effects for "stations" were significant

TABLE 4. *Species composition of CNFRL crosscheck samples from 15 NPMP stations, 1970–74*

Station	Location	1970	1971	1972	1973	1974
2	Connecticut R. Windsor Locks, Conn.	yellow perch white perch	yellow perch	white catfish	yellow perch	yellow perch
3	Hudson R. Poughkeepsie, N.Y.	goldfish	goldfish largemouth bass	goldfish largemouth bass	goldfish largemouth bass	largemouth bass
14	Tombigbee R. McIntosh, Ala.	largemouth bass	largemouth bass	largemouth bass	largemouth bass	freshwater drum
15	Mississippi R. Luling, La.	carp	bigmouth buffalo	carp	blue catfish freshwater drum	carp
18	L. Ontario Port Ontario, N.Y.	white perch	white perch	white perch	yellow perch freshwater drum	yellow perch
21	L. Michigan Sheboygan, Wis.	bloater	lake trout	lake trout bloater	lake trout bloater	lake trout
23	Kanawha R. Winfield, W.Va.	brown bullhead	brown bullhead	white crappie	carp	carp
24	Ohio R. Marietta, Ohio	channel catfish channel catfish	largemouth bass	channel catfish	channel catfish carp	channel catfish
28	Arkansas R. Pine Bluff, Ark.	smallmouth buffalo	flathead catfish	smallmouth buffalo channel catfish	smallmouth buffalo flathead catfish	carp
39	Sacramento R. Sacramento, Calif.	carp	carp	carp	white catfish	carp
53	Merrimac R. Lowell, Mass.	yellow perch	yellow perch	yellow perch	yellow perch	yellow perch
67	Allegheny R. Natrona, Pa.	walleye	walleye	walleye	carp	carp
69	Ohio R. Cincinnati, Ohio	white crappie carp	channel catfish	channel catfish carp	channel catfish	channel catfish
80	Yazoo R. Redwood, Miss.	smallmouth buffalo carp	smallmouth buffalo	smallmouth buffalo carp	smallmouth buffalo channel catfish	channel catfish
81	Red R. Alexandria, La.	smallmouth buffalo	white catfish	channel catfish	blue catfish	channel catfish

TABLE 5. *Results of analytical variance* (F-*values based on wet-weight or lipid-weight concentrations*), *1970–74 crosscheck residues from 15 stations* (N = 92)

Source	DF	DDE	TDE	DDT	Total DDT	Total PCB	Dieldrin	Endrin	Toxaphene
Wet weight									
Stations	14	17.53**	4.76**	4.69**	18.36**	33.38**	1.44	2.22	59.52
Years	4	2.82	1.53	2.43	4.22*	28.45**	4.19	0.29	2.55
Stations × Years	56	1.21	0.27	0.49	0.99	1.47	0.90	0.23	1.85
Error MS	17	0.030	0.048	0.035	0.038	0.045	0.003	0.004	0.019
Lipid weight									
Stations	14	12.78**	11.04*	7.38*	15.79**	15.34**	3.62**	9.06**	261.66**
Years	4	1.48	7.32**	5.99*	3.85**	9.55**	11.97**	1.27	21.73**
Stations × Years	56	1.18	0.80	0.75	1.18	0.72	2.39*	0.52	9.51**
Error MS	16[1]	0.11	0.089	0.102	0.088	0.179	0.023	0.022	0.014

NOTE: * $0.01 < P < 0.05$; ** $P < 0.01$.
[1] No lipid value for one observation.

TABLE 6. *Geometric mean wet-weight and lipid-weight contaminant concentrations for "early" (1970–72) and "late" (1973–74) monitoring years, based on crosscheck analyses from 15 stations, with corresponding* R^2 *values and* F-*values for single-degree-of-freedom contrasts*

	Wet-Weight Concentrations				Lipid-Weight Concentrations			
Compound	1970–72	1973–74	R^2	F	1970–72	1973–74	R^2	F
DDE	1.12	0.78	0.95	3.80	8.78	6.35	0.94	2.63
TDE	0.65	0.10	0.85	5.40*	5.23	2.20	0.94	19.06**
DDT	0.52	0.16	0.85	8.32*	3.93	1.29	0.91	21.71**
Total DDT	2.07	1.16	0.95	13.73**	19.38	10.12	0.95	14.61**
Total PCB	11.19	3.46	0.98	85.34**	116.10	38.08	0.95	25.76**
Dieldrin	0.17	0.07	0.84	8.35**	1.56	0.66	0.94	32.01**
Endrin	0.04	0.06	0.75	0.42	0.24	0.34	0.91	1.02
Toxaphene	0.74	0.49	0.98	4.57*	2.20	1.64	0.99	12.42**

NOTE: * $0.01 < P < 0.05$; ** $P < 0.01$.

for most comparisons (Table 5), as would be expected when comparing such diverse locations with their differing contaminant profiles.

For all compounds where main effects for "years" were significant, the mean for 1973–74 was significantly ($P < 0.01$) lower than that for 1970–72 (Table 6). Furthermore, these decreases were substantial; for example, 50 percent for total DDT and about 65 percent for total PCB at the 15 stations (Table 6).

Residue means based on the 15-station crosscheck data set were generally much higher than the corresponding national means (cf. Tables 3 and 6) because samples from stations with a history of high residues were intentionally selected. To facilitate comparisons of temporal trends between data sets, we expressed the 1973–74 residue means as percentages of the corresponding 1970–72 means for both data sets. As Table 7 illustrates, most of the downward trends noted for the 15 stations were similarly reflected in the 74 station means, supporting many of our earlier conclusions. For example, mean residues of DDE declined less than those of TDE, DDT, and total DDT during 1970–74. Average dieldrin and PCB levels also declined, but to a far greater degree in the 15-station data set than for the nation as a whole. This difference would be expected, considering the higher overall levels and percent occurrence of the compounds in the selected crosscheck samples.

TABLE 7. *Geometric mean wet-weight and lipid-weight contaminant concentrations for 1973–74 as percentages of the 1970–72 means, based on 15 crosscheck stations and 74 stations of the National Pesticide Monitoring Program*

	Wet Weight; Stations		Lipid Weight; Stations	
Compound	15 Crosscheck	74 NPMP	15 Crosscheck	74 NPMP
DDE	69.6	82.9	72.3	77.7
TDE	15.4	52.0	42.1	36.4
DDT	30.8	72.2	32.8	18.2
Total DDT	56.0	53.2	52.2	44.6
Total PCB	30.9	73.7	32.8	52.5
Dieldrin	41.2	85.7	42.3	66.7
Endrin	150.0	100.0	141.7	50.0
Toxaphene[1]	66.2	130.8	71.6	166.7

[1] 1972 vs. 1973–74 for toxaphene.

Endrin levels remained basically unchanged in both data sets, probably because most residues were near or at the detection threshold (about 0.01 μg/g). Toxaphene residues, however, were not quantitatively estimated in the regular NPMP program until 1972; accordingly, "early" vs. "late" years could not be compared. Instead, we chose to compare annual mean toxaphene concentrations for the years 1972–74 (Table 8).

Unlike the previously compared compounds, temporal trends in mean toxaphene residues differed between the two data sets; the means from the full complement of stations showed a slight (but probably not significant) increase, and the 15-station means decreased sharply (significant at the 0.01 level for lipid-weight residues).

TABLE 8. *Geometric mean toxaphene residues (mg/kg), 1972–74*

No. of Stations in Data Set	Wet Weight			Lipid Weight		
	1972	1973	1974	1972	1973	1974
15	0.73	0.59	0.41	3.1	1.6	1.0
74	0.13	0.13	0.16	0.3	0.4	0.5

This apparent contradiction is adequately explained by the composition of the data sets: The sharp decline in the 15-station means represents falling (but still high) average levels at many of the more heavily contaminated stations in the southeast Atlantic, Gulf Coast, and lower Mississippi regions, whereas the increasing occurrence of lower-level toxaphene residues throughout the nation has been sufficient to counteract this regional downward trend in the full data set. This interpretation is supported by significant ($P < 0.01$) station-year interaction for toxaphene residues in the 15-station data set, which implies an increase at some stations despite a significant ($P < 0.01$) downward trend in the overall annual means.

In 1974, 196 million lb (89 million kg) of organochlorine insecticides were used in agriculture within the conterminous United States; of this total, 55 percent was used in corn and cotton production (*18*). Geographically, this pattern resulted in over 50 percent of the organochlorine insecticides having been used in the Southeast and Mid-South (*18*). It is therefore not surprising that elevated residues of DDT and its metabolites (>1.0 μg/g), toxaphene (>0.1 μg/g), and endrin (>0.1 μg/g)—insecticides regularly used in cotton production (*2*)—occurred routinely in fish samples from streams draining the southeastern Atlantic and Gulf coastal plains and lower Mississippi River valley. DDT and its metabolites also occurred routinely during 1970–74 in samples from Lake Michigan and Lake Ontario, the Delaware and Connecticut Rivers in the Northeast, California's Sacramento River, the agricultural areas of the Columbia River watershed in Washington, and Hawaii.

Almost 8 million lb (3.5 million kg) of aldrin were used in 1971 as a soil insecticide, primarily to combat corn rootworm (*2*). As a result, elevated levels (>0.1 μg/g) of mostly dieldrin (the primary metabolite of aldrin) were regularly measured in samples from rivers in the Northeast and Mid-Atlantic regions (Connecticut, Delaware, Susquehanna, and James Rivers), the Southeast (Pee Dee, Savannah, and Altamaha Rivers), the lower Mississippi River and some of its tributaries, Lake Michigan, many of the rivers and streams draining the "Corn Belt" (including tributaries of the Ohio, Mississippi, and lower Missouri River systems), and rivers in Hawaii. The significance of the station-year interaction for lipid-weight dieldrin residues in the 15-station crosscheck data set (Table 5) and the uniformly low annual means for the 74-station trend-monitoring data (Table 3) together point out the significance of these dieldrin "hot spots."

PCBs were encountered at least once in samples from every station during the 1970–74 monitoring period. By 1974, however, no PCBs were detected in samples from some headwaters of the Colorado River system (Stations 35 and 36), the Nueces River, Texas (Station 62), the upper Arkansas and several of its tributaries (Stations 77, 78, 79), and at one of two stations each in Alaska (none at Station 50) and Hawaii (none at Station 99).

High PCB residues in fish from several northeastern rivers, the Ohio River system, and the Great Lakes, have been well publicized. At the other end of the scale, the regular occurrence of trace quantities (≧0.05 μg/g) in fish from relatively remote areas can be explained by recent evidence concerning the vapor behavior and atmospheric transport of PCBs and other chlorinated hydrocarbons (e.g., *5*, *9*, *30*). However, authors were surprised to find relatively high levels of PCBs (≧0.5 μg/g) in fish samples from virtually every station located near a municipal or industrial center, at such geographically diverse locations as Fairbanks, Alaska (Station 49); Honolulu, Hawaii (Station 50); Lake Champlain, Vermont (Station 52); Sacramento, California (Station 40); the Snake, Salmon, and upper Columbia Rivers, Washington (Stations 96–98); the Bear River, Idaho (Station 95); and the Truckee River, Nevada (Station 37).

Relative contributions of the PCB mixture varied among the locations, illustrating different use patterns for these compounds. For example, samples from the Hudson River collected during 1973 and 1974 most closely resembled Aroclor 1254, with little Aroclor 1242 or 1260. Conversely, samples from the Ohio River contained proportionately higher concentrations of mixtures resembling Aroclors 1242 and 1260, and crosscheck analyses revealed significant quantities of Aroclor 1248 in both watersheds (Appendix B). Aroclor 1016, which contains a higher percentage of compounds with low chlorine numbers than do Aroclors 1242, 1248, 1254, or 1260, was the principal mixture released to the Hudson River (*9*). However, NPMP fish samples, collected 190 km downstream from the PCB source, yielded packed-column chromatograms more closely resembling those of Aroclor 1248 standards than either Aroclors 1016 or 1242 (M. Ribick, 1980, unpublished CNFRL data). Skea et al. (*27*) demonstrated significant accumulation of Aroclor 1016 by caged fish held immediately downstream of the Hudson River's PCB source after only 14 days of exposure; their chromatograms closely

resembled those of Aroclor 1016, but they reported slight enhancement of 5- and 6-chlorine components. These data collectively suggest that environmental weathering will eventually degrade the earlier-eluting, low chlorine PCBs, leaving mixtures that resemble residues of Aroclors 1248, 1254, and 1260.

When we listed the stations where the highest concentrations of the 13 monitored compounds occurred each year (Table 9), certain station numbers occurred repeatedly. Station 80, for example, appeared often in the DDT group, and was also the station reporting the highest toxaphene concentration during 1972, 1973, and 1974. This station is located on the Yazoo River near Redwood, Mississippi in a watershed largely devoted to cotton and soybean farming. Annual DDT maxima also occurred at Stations 14 (Tombigbee River, Alabama), 16 (Rio Grande at Mission, Texas), and 57 (Altamaha River, Georgia), which also drain cotton-farming areas. Station 76, on the Mississippi River at Memphis, was the site of the highest endrin levels in three of the five monitoring years and of the highest heptachlor levels in 1973 (Table 9). A major producer of both endrin and heptachlor has a manufacturing facility on a tributary of the Mississippi River at Memphis (*6,7*). Extensive fish kills in the lower Mississippi that followed chemical spills have been attributed to this facility (*25*). Furthermore, CNFRL chemists have detected residues of hexachloronorbornadiene (>5 μg/g) and heptachloronorborn-2-ene (>16 μg/g)—intermediates in the production of cyclodiene insecticides (*36*)—in fish from Station 76 (M. Ribick, 1979, personal communication). These levels are about 100 times the values reported from other stations, even where significant cyclodiene insecticide residues were present. Other workers have found elevated levels of these and related cyclodiene precursors and by-products in fish, sediments, and water from this area of the Mississippi River (*20*). Consistently high dieldrin levels at Station 76 (Appendix Tables A and B) may also be related to chemical spills; aldrin and dieldrin were also produced by the facility at Memphis (*7*). However, dieldrin residues were highest at Station 100 (Manoa Stream, Honolulu) in all five monitoring years (Table 9).

TABLE 9. *Stations of the National Pesticide Monitoring Program where maximum contaminant concentrations were recorded during 1970–74*

Compound	Year				
	1970	1971	1972	1973	1974
p-p'-DDE	16	16	14	14	57
p-p'-TDE	80	80	3	80	80
p-p'-DDT	80	80	80	14	21
Total DDT	80	21	14	14	80
Aroclor 1242	—	—	—	24	2
Aroclor 1254	—	—	—	3/69	3
Aroclor 1260	—	—	—	21	55
Total PCB	67	3	69	3/69	3
Toxaphene	—	x[1]	80	80	80
Dieldrin	100[2]	100[2]	100[2]	100[2]	100[2]
BHC	53[4]	—	—	—	—
Endrin	—	76	76	76	83
Heptachlor[5]	26[6]	18[6]	76	90	x[1]

[1] All values reported as either 0.01 or 0.00.
[2] Dieldrin only.
[3] Includes aldrin.
[4] BHC + lindane.
[5] Includes heptachlor epoxide.
[6] Only station where found.

As expected, the locations at which highest annual PCB residues occurred most frequently were Stations 3 (Hudson River) and 69 (Ohio River at Cincinnati) (Table 9). Annual maxima for PCBs also occurred at Stations 67 (Allegheny River, Pennsylvania), 21 (Lake Michigan), 55 (James River, Virginia), and 2 (Connecticut River, Connecticut).

Generally, geographic trends were consistent from year to year. Usually, the compounds found in more than trace quantities at a given station were identical each year, as would be expected for persistent compounds in long-lived organisms. Exceptions appear to be residues of dieldrin and toxaphene. The occurrence of high dieldrin concentrations appears to be declining, but national mean residues declined only slightly, and "hot spots," such as Hawaii and certain mid-western rivers, persisted through 1974. Toxaphene residues appear to be generally higher and are becoming more widespread. Of special concern is the occurrence of toxaphene residues in the Great Lakes. Toxaphene was detected in a 1972 trend sample from Lake Michigan (Station 21), and in a 1974 CNFRL crosscheck from Lake Superior (Station 102) (Appendix B). Because relatively little toxaphene has been used in the Great Lakes drainage basin (V. Saulys, U.S. Environmental Protection Agency, Chicago, Illinois, unpublished data), we believe these residues result from the atmospheric transport of toxaphene from other geographic areas.

HAZARDS TO PISCIVOROUS FISH AND FISH-EATING WILDLIFE FROM PERSISTENT ORGANOCHLORINE RESIDUES IN FISH

The NPMP residue values represent whole-body concentrations of contaminants. As such, they are not directly comparable to standards established for fish consumed as food by humans, which are based on residues in edible portions. However, the NPMP data are representative of the contaminant levels to which piscivorous fishes and wildlife would be exposed.

The revised edition of *Water Quality Criteria* (*22*) recommended that, for the protection of predatory fishes and wildlife, residues of DDT and its metabolites should not exceed 1.0 μg/g; residues of dieldrin, aldrin, endrin, BHC, heptachlor epoxide, chlordane, and toxaphene should not exceed 0.1 μg/g, either singly or in combination; and PCB residues should not exceed 0.5 μg/g. The authors also pointed out that "if fish and wildlife are to be protected, and where residues exceed recom-

mended concentrations, pesticide use should be restricted until the recommended concentrations are reached (except where a substitute pesticide will not protect human health . . ." Authors computed the percentage of the samples from each station meeting or exceeding these criteria during 1970–74 and graphically tabulated the results in Figure 4 (trace occurrences of the various compounds are also illustrated). The far-right column (labeled "Net Effect") contains the symbol representing the highest percentage occurring each year at a station. This percentage may be thought of as representing the probability that a meal of adult fish eaten by a piscivorous organism at each location would be contaminated by one or more of the compounds measured to levels deemed dangerous to the predator's well-being.

Although the trend from 1970 to 1974 was definitely downward, the total number of stations where 50 percent or more of the samples collected contained residues of one or more compounds exceeding the recommended criteria declined only 5 percent, from 71 of 100 (71 percent) in 1970 to 64 of 97 (66 percent) in 1974 (Fig. 4). For the 74 stations constituting the "complete" data matrix, the percentages were similar, declining from 86 percent in 1970 to 76 percent in 1974. As described previously and illustrated by Figure 4, geographic trends remained fairly consistent from year to year.

Our whole-body residue values are generally higher than comparable samples based on edible portions, simply because muscle tissue typically contains relatively low concentrations of these lipophyllic substances, compared with other tissues that have a higher lipid content. Thus our values cannot be compared directly with those developed by other agencies analyzing edible portions. For this reason, and because whole fish are far more difficult to process and analyze than are skinless, boneless muscle samples (i.e., fillets), the rationale for using whole-fish composites is frequently criticized. However, the purpose of our monitoring program is different from that of other agencies in that we are attempting to assess existing and potential threats to fish and wildlife resources; although we recognize the significance of the threats to human health and well-being and the fishery resource losses resulting from contamination, those are not our primary concerns. Since piscivorous fish and wildlife consume the entire fish, and not only the muscle tissue, and since fish frequently make up a significant part (if not all) of their diet, the higher whole-body residue represents a more accurate assessment of the contaminant levels to which fish and wildlife resources are exposed. Furthermore, the NAS-NAE recommendations for the protection of piscivorous fish and wildlife (*22*), with which we compared our residues (Fig. 4), were based largely on controlled laboratory studies in which test animals were exposed to contaminants. Authors therefore feel that Figure 4 represents a reasonable assessment of the threat to piscivorous fish and wildlife inhabiting major U.S. rivers and the Great Lakes posed by organochlorine residues in freshwater fish. As this figure illustrates, the threat appears to be significant and widespread.

Samples of adult fish collected periodically from large rivers and lakes yield diluted, time-integrated representations of contaminant levels in broad geographic areas. The longevity of the fish and the tremendous water volumes of major lakes and rivers can mask the effects of locally severe, temporally varying contaminant problems. This phenomenon can be observed in our data by comparing the high residues at Station 80 (Yazoo River, Mississippi) with the much lower corresponding residues at Station 15 (Mississippi River at Luling, Louisiana). Similar comparisons can be made for dieldrin residues at Station 90 (Kansas River at Bonner Springs, Kansas) and at Station 83 (Missouri River at Hermann, Missouri), and for Station 26 (Illinois River at Beardstown, Illinois) and Station 75 (Mississippi River at Cape Girardeau, Missouri). Residues in fish from lower-order streams in some watersheds may be considerably higher than those in our samples, and may therefore represent a greater threat.

Even the tremendous evolution of analytical methods during 1970–74 has yielded techniques for identifying and quantifying only a small percentage of the toxic organic compounds that may now be threatening our fish and wildlife resources. Some residues cannot be determined in fish tissues, and some highly toxic substances are either rapidly metabolized or are not accumulated to levels sufficient for detection. Our current abilities to relate measured residue levels to observed biological effects is similarly limited. Accurate assessment of present and future threats stemming from contaminants associated with continued technological growth therefore requires a continuing commitment to analytical methods development and a priori hazard evaluation.

Summary and Conclusions

Residues of DDT and its metabolites in fishes from the nation's major rivers and lakes showed a continuing downward trend in 1970–74. The steady decrease in total DDT (*p,p'*-homologs) illustrates the effectiveness of the 1972 ban on the use of DDT in the United States. Although DDT residues remain high in some areas where it was used extensively in the past, the overall trend has been downward. Even in areas where total DDT residues remain high, *p,p'*-DDE is present in greater proportions than in the past, indicating substantial degradation of DDT in the environment. Furthermore, interpretation of crosscheck results re-

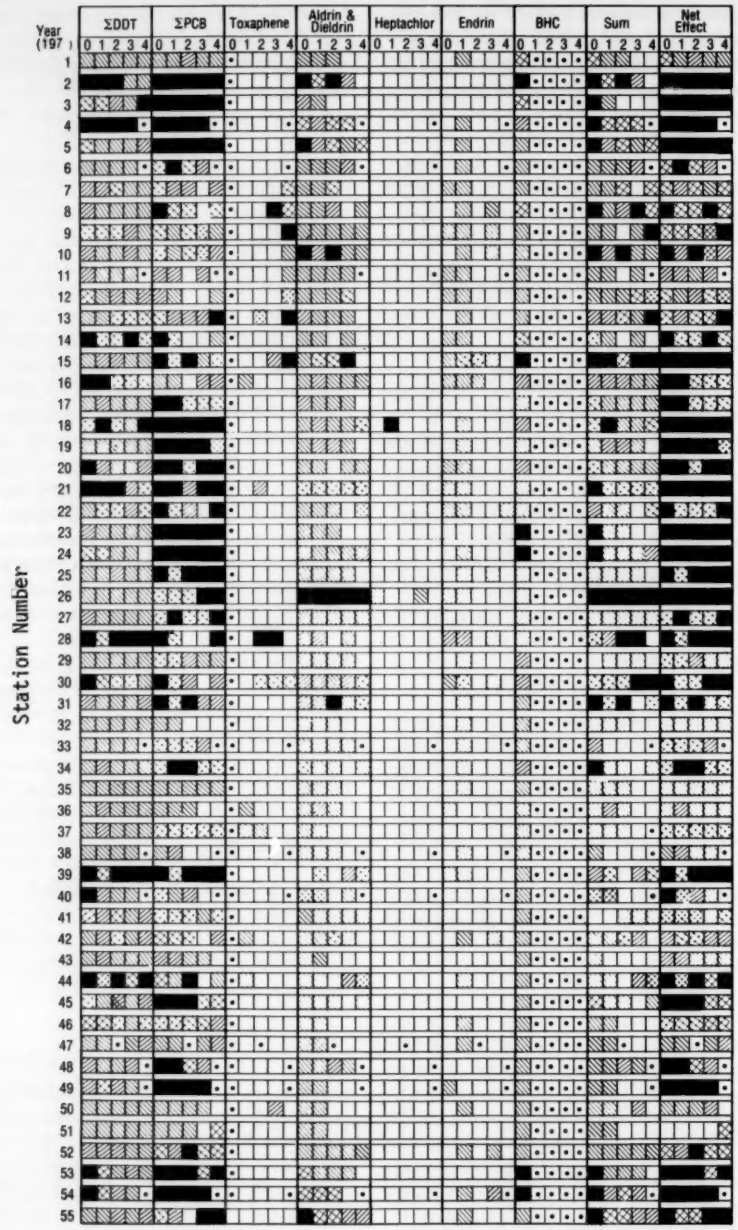
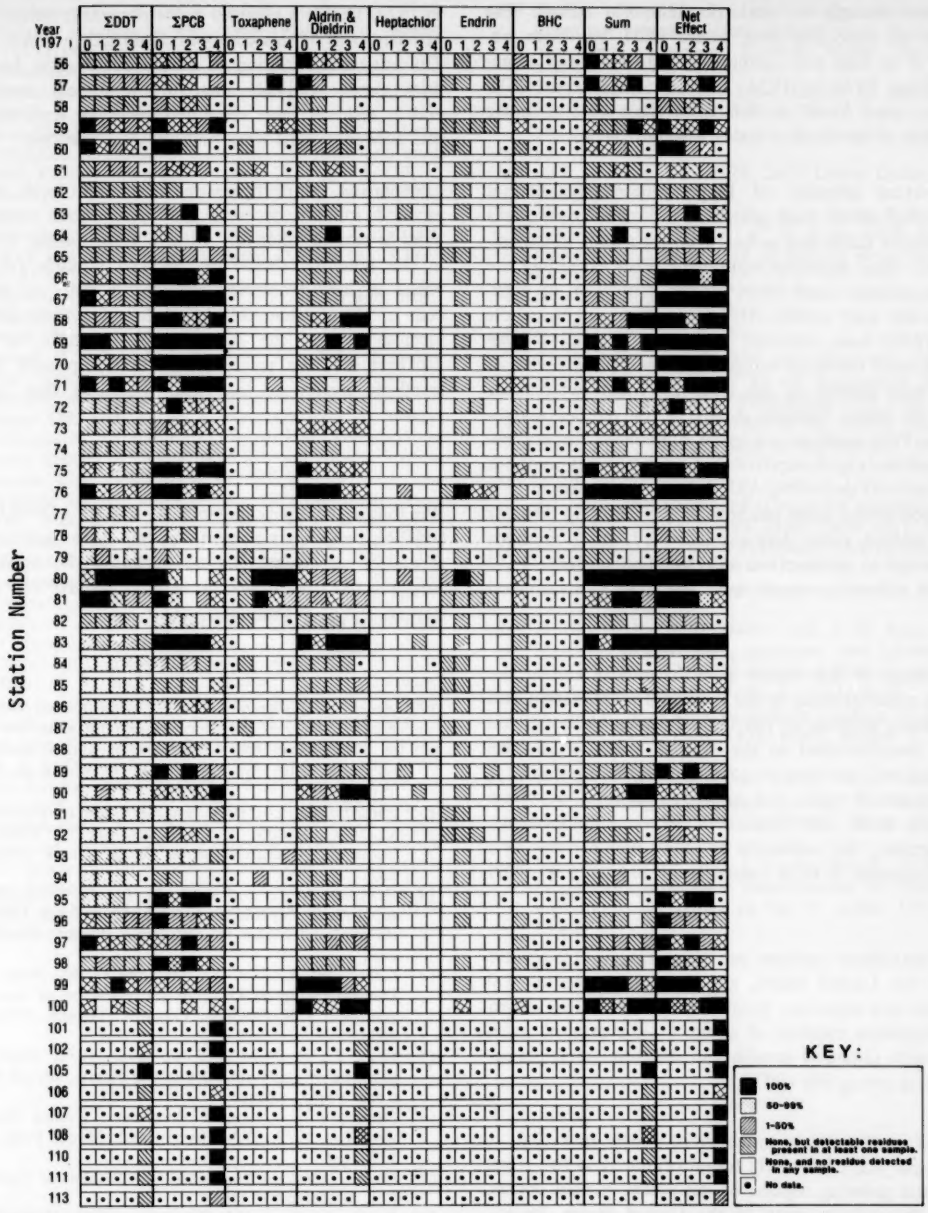


FIGURE 4. *Percentage of samples from NPMP stations (station numbers in left-hand column) equaling or exceeding NAS-NAE criteria for minimum acceptable whole-body organochlorine residues, 1970 (0 in box heading) to 1974 (4 in box heading)*



ΣDDT = *p,p'*-isomers of TDE, DDE, and DDT; ΣPCB = Aroclor 1254 for 1970–72, Aroclors 1242, 1254, and 1260 for 1973, and Aroclors 1242, 1248, 1254, and 1260 for 1974. Sum represents the total of toxaphene, aldrin, dieldrin, endrin, and BHC (total α- and γ-isomers).

vealed a similar decline, suggesting that analytical interferences from other organochlorine compounds were not great enough to mask the temporal trends. The number of collection sites where DDT has been observed in at least one sample has also decreased somewhat from 1970 to 1974. However, significant DDT residues were found in fish from most of the major drainages of the United States through 1974.

The virtual ubiquity of PCBs reflects the former widespread use of these persistent industrial compounds as hydraulic fluids and as heat transfer agents in capacitors and other electrical equipment. Fish exceeding the residue criterion established for the protection of piscivorous fish and wildlife (0.5 μg/g wet weight, whole fish) (*22*), were collected regularly from all NPMP stations near urban or industrial areas. Trace levels of PCBs were present in fish from the major watersheds of all 50 states. Definite trends in the overall magnitude of PCB residues are more difficult to discern because of the rapid improvement in analytical methods between 1970 and 1974. Although there appears to be a slight downward trend nationwide, especially in Aroclor 1254 residues, more data produced by better methods are needed to substantiate this trend. Significant PCB residues still occur regularly at the most contaminated sites.

PCBs occur in fish tissues most frequently and at the highest concentrations in the industrial northeastern and midwestern sections of the United States. Although no longer manufactured in the United States, PCBs are still used and continue to contaminate the environment as a result of spills and improper disposal of waste hydraulic fluids and discarded electrical components. Furthermore, the sediments of many major rivers and lakes represent a PCB reservoir of unknown proportions.

Mean toxaphene residues are increasing in freshwater fish of the United States, and residues exceeding 1.0 μg/g are now common. Studies by CNFRL have shown that toxaphene residues of about 1 μg/g may be associated with impaired growth and developmental abnormalities in young fish (*20*).

Toxaphene also occurs much more widely now than it did in past years. Formerly found primarily in fish from the cotton growing regions of the South, it now occurs in fish throughout much of the United States. Its increasing occurrence may be explained by the increased use of toxaphene in other types of agriculture, largely as a substitute for DDT and other compounds that have been banned. However, authors also suspect that atmospheric transport may represent a significant route of transfer to other geographic regions.

Nationally, average residues of dieldrin and endrin in fish tissues remained essentially unchanged from 1970 to 1974. Dieldrin residues are widespread, reflecting the extensive use of this compound and aldrin before 1970. The apparent variation in endrin occurrence, however, may merely indicate changing analytical resolution; endrin residues have remained generally low, but residue concentrations were high at some stations.

Comparison of observed residues with levels recommended for the protection of piscivorous fishes and wildlife reveals relatively little change during 1970–74 in the potential threat to fish and wildlife resources posed by organochlorine residues in fish. At 66 percent of the stations sampled every year, over half the samples exceed the recommended criteria in 1974. Furthermore, the residues measured represent only a small proportion of the toxic chemicals that may be present.

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APPENDIX A. NATIONAL PESTICIDE MONITORING PROGRAM, FRESHWATER FISH STATIONS

STATION NO.	LAKE OR RIVER	CITY	STATE
1	PENOBSCOT RIVER	OLDTOWN	ME
2	CONNECTICUT RIVER	WINDSOR LOCKS	CT
3	HUDSON RIVER	POUGHKEEPSIE	NY
4	DELAWARE RIVER	CAMDEN	NJ/PA
5	SUSQUEHANNA RIVER	CONOWINGO DAM	MD
6	POTOMAC RIVER	LITTLE FALLS	MD/VA
7	ROANOKE RIVER	ROANOKE RAPIDS	NC
8	CAPE FEAR RIVER	ELIZABETHTOWN	NC
9	COOPER RIVER	LAKE MOULTRIE,MONCKS CORNER	SC
10	SAVANNAH RIVER	SAVANNAH	GA/SC
11	ST. JOHNS RIVER	WELAKA	FL
12	ST. LUCIE CANAL	INDIANTOWN	FL
13	APALACHICOLA RIVER	J. WOODRUFF DAM	FL
14	TOMBIGBEE RIVER	MCINTOSH	AL
15	MISSISSIPPI RIVER	LULING	LA
16	RIO GRANDE	MISSION	TX
17	GENESEE RIVER	SCOTSVILLE	NY
18	LAKE ONTARIO	PORT ONTARIO	NY
19	LAKE ERIE	ERIE	PA
20	LAKE HURON (SAGINAW BAY)	BAY PORT	MI
21	LAKE MICHIGAN	SHEBOYGAN	WI
22	LAKE SUPERIOR	BAYFIELD	WI
23	KANAWHA RIVER	WINFIELD	WV
24	OHIO RIVER	MARIETTA	OH/WV
25	CUMBERLAND RIVER	CLARKSVILLE	TN
26	ILLINOIS RIVER	BEARDSTOWN	IL
27	MISSISSIPPI RIVER	GUTTENBURG	IA/WI
28	ARKANSAS RIVER	PINE BLUFF	AR
29	ARKANSAS RIVER	KEYSTONE RESERVOIR	OK
30	WHITE RIVER	DEVALLS BLUFF	AR
31	MISSOURI RIVER	NEBRASKA CITY	NE/IA
32	MISSOURI RIVER	GARRISON DAM	ND
33	MISSOURI RIVER	GREAT FALLS	MT
34	RED RIVER OF THE NORTH	HOYES	MN/ND
35	GREEN RIVER	VERNAL	UT
36	COLORADO RIVER	IMPERIAL RESERVOIR	AZ/CA
37	TRUCKEE RIVER	FERNLEY	NV
38	UTAH LAKE	PROVO	UT
39	SACRAMENTO RIVER	SACRAMENTO	CA
40	SAN JOAQUIN RIVER	LOS BANOS	CA
41	SNAKE RIVER	HAGERMAN	ID
42	SNAKE RIVER	LEWISTON	ID/WA
43	SALMON RIVER	RIGGINS	ID
44	YAKIMA RIVER	GRANGER	WA
45	WILLAMETTE RIVER	OREGON CITY	OR
46	COLUMBIA RIVER	CASCADE LOCKS	OR/WA
47	KLAMATH RIVER	HORNBROOK	CA
48	ROGUE RIVER	GOLDRAY DAM	OR
49	CHENA RIVER	FAIRBANKS	AK
50	KENAI RIVER	SOLDATNA	AK
51	KENNEBEC RIVER	HINCKLEY	ME
52	LAKE CHAMPLAIN	BURLINGTON	VT

APPENDIX A (CONT'D)

53	MERRIMAC RIVER	LOWELL	MA
54	RARITAN RIVER	HIGHLAND PARK	NJ
55	JAMES RIVER	RICHMOND	VA
56	PEE DEE RIVER	JOHNSONVILLE	SC
57	ALTAMAHA RIVER	DOCTORTOWN	GA
58	SUWANEE RIVER	OLD TOWN	FL
59	ALABAMA RIVER	CHRYSLER	AL
60	BRAZOS RIVER	RICHMOND	TX
61	COLORADO RIVER	WHARTON	TX
62	NUECES RIVER	MATHIS	TX
63	RIO GRANDE	ELEPHANT BUTTE	NM
64	RIO GRANDE	ALAMOSA	CO
65	PECOS RIVER	RED BLUFF LAKE	TX
66	ST. LAWRENCE RIVER	MASSENA	NY
67	ALLEGHENY RIVER	NATRONA	PA
68	WABASH RIVER	NEW HARMONY	IN/IL
69	OHIO RIVER	CINCINNATI	OH/KY
70	OHIO RIVER	METROPOLIS	IL/KY
71	TENNESSEE RIVER	SAVANNAH	TN
72	WISCONSIN RIVER	WOODMAN	WI
73	DES MOINES RIVER	KEOSAUQUA	IA
74	MISSISSIPPI RIVER	LITTLE FALLS	MN
75	MISSISSIPPI RIVER	CAPE GIRARDEAU	MO/IL
76	MISSISSIPPI RIVER	MEMPHIS	TN/AR
77	ARKANSAS RIVER	JOHN MARTIN RESERVOIR	CO
78	VERDIGRIS RIVER	OOLOGAH	OK
79	CANADIAN RIVER	EUFAULA	OK
80	YAZOO RIVER	REDWOOD	MS
81	RED RIVER	ALEXANDRIA	LA
82	RED RIVER	LAKE TEXOMA	OK/TX
83	MISSOURI RIVER	HERMANN	MO
84	BIG HORN RIVER	HARDIN	MT
85	YELLOWSTONE RIVER	SIDNEY	MT
86	JAMES RIVER	OLIVET	SD
87	NORTH PLATTE RIVER	LAKE MCCONAUGHY	NE
88	SOUTH PLATTE RIVER	BRULE	NE
89	PLATTE RIVER	LOUISVILLE	NE
90	KANSAS RIVER	BONNER SPRINGS	KS
91	COLORADO RIVER	LAKE HAVASU	AZ/CA
92	COLORADO RIVER	LAKE MEAD	NV/AZ
93	COLORADO RIVER	LAKE POWELL,PAGE	AZ
94	GILA RIVER	SAN CARLOS RESERVOIR	AZ
95	BEAR RIVER	PRESTON	ID
96	SNAKE RIVER	ICE HARBOR DAM	WA
97	COLUMBIA RIVER	PASCO	WA
98	COLUMBIA RIVER	GRAND COULEE	WA
99	WAIKELE STREAM	WAIPAHU	HI
100	MANOA STREAM	HONOLULU	HI
101	ANDROSCOGGIN RIVER	LEWISTON	ME
102	LAKE SUPERIOR	KEEWEENAW POINT	MI
103	LAKE SUPERIOR	WHITEFISH POINT	MI
104	LAKE MICHIGAN	BEAVER ISLAND	MI

APPENDIX A (CONT'D)

105	LAKE MICHIGAN	SAUGATUCK	MI
106	LAKE HURON	ALPENA	MI
107	LAKE ST. CLAIR	MT. CLEMENS	MI
108	LAKE ERIE	PORT CLINTON	OH
109	LAKE ONTARIO	ROOSEVELT BEACH	NY
110	LAKE ONTARIO	CAPE VINCENT	NY
111	MISSISSIPPI RIVER	LAKE CITY	MN/WI
112	MISSISSIPPI RIVER	DUBUQUE	IA/IL/WI
113	SAN ANTONIO RIVER	MCFADDIN	TX
114	BEAR CREEK	BRIGHAM CITY	UT
115	COLORADO RIVER	YUMA	AZ/CA
116	SOURIS RIVER	UPHAM	ND
117	FLATHEAD RIVER	CRESTON	MT

STATION 1, PENOBSCOT RIVER AT OLDTOWN, ME

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
70	CHAIN PICKEREL	16.4	1.0	1.2	0.06	0.05	0.05	-	-	0.46	-	0.01	0.00	0.00	-	-	-	-	0.11	-
70	WHITE SUCKER	15.1	1.3	2.5	0.06	0.06	0.04	-	-	0.34	-	0.00	0.00	0.00	-	-	-	-	0.10	-
70	WHITE SUCKER	15.3	1.3	2.7	0.04	0.04	0.03	-	-	0.21	-	0.01	0.00	0.00	-	-	-	-	0.08	-
70	YELLOW PERCH	7.9	0.2	3.5	0.06	0.05	0.04	-	-	0.33	-	0.01	0.00	0.00	-	-	-	-	0.10	-
71	CHAIN PICKEREL	15.1	0.7	1.7	0.03	0.03	0.03	-	-	0.25	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	CHAIN PICKEREL	15.0	0.7	1.6	0.04	0.04	0.04	-	-	0.33	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	WHITE SUCKER	12.5	0.8	2.2	0.02	0.03	0.02	-	-	0.13	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	WHITE SUCKER	12.5	0.8	2.5	0.02	0.02	0.02	-	-	0.18	-	0.00	0.00	0.00	-	-	0.00	-	-	-
71	YELLOW PERCH	7.5	0.2	3.7	0.04	0.03	0.03	-	-	0.26	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	YELLOW PERCH	7.9	0.2	4.1	0.04	0.04	0.03	-	-	0.33	-	0.01	0.01	0.00	-	-	0.00	-	-	-
72	CHAIN PICKEREL	14.1	0.6	1.4	0.00	0.02	0.00	-	-	1.30	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	WHITE SUCKER	13.5	1.0	3.2	0.00	0.02	0.01	-	-	0.20	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	YELLOW PERCH	8.9	0.3	3.7	0.03	0.02	0.09	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	YELLOW PERCH	8.9	0.3	3.5	0.02	0.01	0.00	-	-	0.36	-	0.01	0.00	0.00	-	-	0.00	-	-	-
73	CHAIN PICKEREL	16.6	1.0	1.9	0.04	0.00	0.00	0.0	-	0.20	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	WHITE SUCKER	14.8	1.3	3.3	0.02	0.00	0.00	0.0	-	0.10	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	WHITE SUCKER	13.6	1.0	2.1	0.02	0.00	0.00	0.0	-	0.20	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	YELLOW PERCH	8.8	0.3	3.8	0.04	0.00	0.00	0.0	-	0.30	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CHAIN PICKEREL	16.3	1.2	2.5	0.04	0.00	0.00	0.0	-	0.40	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	WHITE SUCKER	15.6	1.5	4.3	0.04	0.00	0.00	0.0	-	0.30	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	YELLOW PERCH	9.5	0.5	4.4	0.02	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	YELLOW PERCH	10.5	0.6	4.2	0.04	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 51, KENNEBEC RIVER AT HINCKLEY, ME

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
70	SMALLMOUTH BASS	11.3	0.9	4.8	0.09	0.04	0.04	-	-	0.29	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	WHITE PERCH	8.9	0.5	12.7	0.04	0.03	0.03	-	-	0.17	-	0.01	0.00	0.00	-	-	-	-	0.02	-
70	YELLOW PERCH	9.3	0.1	3.4	0.05	0.04	0.05	-	-	0.25	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	YELLOW PERCH	9.0	0.1	3.0	0.07	0.04	0.05	-	-	0.22	-	0.01	0.00	0.00	-	-	-	-	0.01	-
71	SMALLMOUTH BASS	13.0	1.1	3.7	0.06	0.04	0.03	-	-	0.29	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	SMALLMOUTH BASS	14.4	1.4	2.6	0.07	0.03	0.05	-	-	0.32	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	WHITE SUCKER	12.7	0.8	2.6	0.01	0.02	0.02	-	-	0.13	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	WHITE SUCKER	13.8	0.9	2.0	0.03	0.02	0.02	-	-	0.12	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	YELLOW PERCH	10.3	0.5	3.9	0.04	0.03	0.04	-	-	0.19	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	YELLOW PERCH	9.1	0.3	2.9	0.03	0.03	0.02	-	-	0.12	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	SMALLMOUTH BASS	11.2	0.6	2.1	0.05	0.01	0.02	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	WHITE PERCH	8.5	0.3	3.2	0.01	0.00	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	YELLOW PERCH	9.7	0.4	4.1	0.05	0.01	0.04	-	-	0.20	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	YELLOW PERCH	9.7	0.4	4.7	0.05	0.02	0.02	-	-	0.20	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	SMALLMOUTH BASS	11.4	0.8	2.3	0.04	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	WHITE SUCKER	10.8	0.5	2.0	0.01	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	YELLOW PERCH	9.6	0.4	3.5	0.04	0.02	0.02	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	YELLOW PERCH	10.2	0.5	3.6	0.04	0.03	0.02	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	16.3	1.0	1.8	0.05	0.01	0.01	0.0	-	0.40	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	WHITE SUCKER	13.3	1.0	3.6	0.01	0.01	0.01	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	YELLOW PERCH	9.9	0.4	4.2	0.07	0.00	0.00	0.0	-	0.50	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	YELLOW PERCH	10.1	0.4	3.3	0.05	0.02	0.01	0.0	-	0.50	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 101, ANDROSCOGGIN RIVER AT LEWISTON, ME

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
74	CHAIN PICKEREL	14.7	0.9	3.8	0.09	0.08	0.03	0.0	-	1.30	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	WHITE SUCKER	15.1	1.5	7.7	0.06	0.12	0.04	0.0	-	1.40	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	WHITE SUCKER	15.1	1.5	4.3	0.08	0.15	0.00	0.0	-	1.80	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	YELLOW PERCH	8.9	0.4	4.4	0.00	0.04	0.00	0.0	-	0.80	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	3.9	0.03	0.04	0.01	0.0	0.0	0.30	0.2	0.01	0.00	0.00	0.02	0.00	0.00	0.00	0.06	0.01

STATION 53, MERRIMAC RIVER AT LOWELL, MA

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	PUMPKINSEED	5.6	0.1	3.6	0.57	0.34	0.21	-	-	1.87	-	0.02	0.00	0.00	-	-	-	-	0.71	-
70	WHITE SUCKER	12.0	0.6	4.7	1.04	1.03	0.34	-	-	5.47	-	0.05	0.00	0.00	-	-	-	-	3.22	-
70	WHITE SUCKER	10.4	0.5	5.3	0.70	0.67	0.40	-	-	4.90	-	0.32	0.00	0.00	-	-	-	-	3.70	-
70	YELLOW PERCH	7.9	0.2	4.1	1.17	1.13	0.39	-	-	6.12	-	0.32	0.00	0.00	-	-	-	-	2.23	-
70	CROSSCHECK	-	-	3.4	0.34	0.70	0.32	-	75.0	6.10	3.2	0.71	0.00	0.08	-	-	0.00	-	-	-
71	PUMPKINSEED	6.2	0.2	4.7	0.29	0.44	0.25	-	-	4.82	-	0.04	0.00	0.00	-	-	0.00	-	-	-
71	PUMPKINSEED	4.4	0.1	2.3	0.22	0.42	0.25	-	-	4.82	-	0.07	0.00	0.00	-	-	0.00	-	-	-
71	WHITE SUCKER	12.0	0.7	5.5	0.35	0.55	0.22	-	-	13.30	-	0.06	0.00	0.00	-	-	0.00	-	-	-
71	WHITE SUCKER	11.1	0.5	4.7	0.55	0.82	0.37	-	-	23.40	-	0.05	0.00	0.00	-	-	0.00	-	-	-
71	YELLOW PERCH	10.7	0.6	7.6	0.65	1.11	0.29	-	-	21.90	-	0.09	0.00	0.00	-	-	0.00	-	-	-
71	YELLOW PERCH	10.7	0.6	6.2	0.60	0.82	0.29	-	-	20.60	-	0.08	0.00	0.00	-	-	0.00	-	-	-
71	CROSSCHECK	-	-	7.3	0.23	0.34	0.08	-	40.0	3.00	1.6	0.15	0.00	0.06	0.22	-	0.00	0.31	-	-
72	CARP	10.2	0.5	1.5	0.00	0.06	0.00	-	-	1.20	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	WHITE SUCKER	12.5	0.5	3.1	0.47	0.00	0.00	-	-	3.20	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	YELLOW PERCH	10.1	0.6	7.7	0.00	0.00	0.00	-	-	10.20	-	0.05	0.00	0.00	-	-	0.00	-	-	-
72	CROSSCHECK	-	-	7.8	0.51	0.35	0.09	-	3.4	3.50	1.9	0.08	0.00	0.00	0.36	-	0.00	0.02	-	-
72	YELLOW PERCH	9.3	0.5	6.6	0.00	0.40	0.00	-	-	8.80	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	11.6	0.8	3.2	0.10	0.15	0.00	0.0	-	0.80	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	11.5	0.8	2.6	0.11	0.08	0.00	0.0	-	1.10	0.0	0.02	0.00	0.00	-	-	0.00	-	-	-
73	WHITE SUCKER	12.2	0.7	1.0	0.06	0.02	0.00	0.0	-	0.09	0.0	0.01	0.00	0.00	-	-	0.00	-	-	-
73	YELLOW PERCH	11.5	0.9	5.5	0.91	0.22	0.00	0.0	-	12.00	0.0	0.05	0.00	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	8.7	0.20	0.38	0.05	0.0	4.0	2.50	2.0	0.01	0.00	0.00	0.00	-	0.00	0.09	0.05	0.00
74	CHAIN PICKEREL	16.3	1.1	5.3	0.30	0.24	0.00	0.0	-	4.60	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	WHITE SUCKER	11.7	0.6	5.4	0.05	0.17	0.00	0.0	-	1.40	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	WHITE SUCKER	11.4	0.6	4.4	0.05	0.15	0.00	0.0	-	1.40	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	YELLOW PERCH	8.6	0.4	5.0	0.40	0.22	0.00	0.0	-	5.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	4.7	0.18	0.19	0.03	0.0	0.0	2.20	1.2	0.01	0.01	0.01	0.15	0.03	0.00	0.03	0.53	0.00

STATION 2, CONNECTICUT RIVER AT WINDSOR LOCKS, CT

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	WHITE CATFISH	12.6	0.9	5.4	0.64	0.65	0.52	-	-	6.25	-	0.20	0.00	0.00	-	-	-	-	0.15	-
70	WHITE CATFISH	12.9	1.0	8.0	0.73	0.78	0.57	-	-	7.44	-	0.23	0.00	0.00	-	-	-	-	0.25	-
70	WHITE PERCH	9.9	0.6	4.6	0.64	0.94	0.89	-	-	9.38	-	0.28	0.00	0.00	-	-	-	-	0.19	-
70	CROSSCHECK	-	-	4.8	0.18	0.16	0.25	-	6.6	5.00	6.1	0.38	0.00	0.02	-	-	0.00	-	-	-
70	YELLOW PERCH	10.5	0.6	7.0	0.44	0.46	0.61	-	-	2.45	-	0.44	0.00	0.00	-	-	-	-	0.20	-
70	CROSSCHECK	-	-	6.4	0.30	0.62	0.94	-	6.4	2.60	1.2	0.99	0.00	0.14	-	-	0.00	-	-	-
71	WHITE CATFISH	12.1	0.8	5.4	0.76	0.65	0.50	-	-	13.50	-	0.09	0.00	0.00	-	-	0.00	-	-	-
71	WHITE CATFISH	12.9	1.1	5.9	0.63	0.60	0.50	-	-	9.90	-	0.08	0.00	0.00	-	-	0.00	-	-	-
71	WHITE PERCH	8.6	0.4	5.1	0.64	0.65	0.65	-	-	14.20	-	0.10	0.00	0.00	-	-	0.00	-	-	-
71	WHITE PERCH	10.0	0.6	4.4	0.44	0.60	0.61	-	-	12.50	-	0.11	0.00	0.00	-	-	0.00	-	-	-
71	YELLOW PERCH	8.8	0.3	3.3	0.65	0.63	0.51	-	-	18.90	-	0.15	0.00	0.00	-	-	0.00	-	-	-
71	YELLOW PERCH	10.0	0.6	4.6	0.83	0.76	0.61	-	-	15.40	-	0.23	0.00	0.00	-	-	0.00	-	-	-
71	CROSSCHECK	-	-	3.6	0.31	0.16	0.28	-	9.7	2.60	1.8	0.21	0.00	0.04	0.24	-	0.00	0.02	-	-
72	WHITE CATFISH	13.5	1.0	5.8	0.93	0.30	0.19	-	-	12.00	-	0.12	0.00	0.00	-	-	0.00	-	-	-
72	CROSSCHECK	-	-	5.8	0.56	0.23	0.17	-	4.6	4.30	1.6	0.08	0.00	0.00	0.23	-	0.00	0.01	-	-
72	WHITE CATFISH	13.3	1.0	8.1	0.69	0.48	0.31	-	-	9.10	-	0.31	0.00	0.00	-	-	0.00	-	-	-
72	WHITE PERCH	10.0	0.5	3.0	0.42	0.67	0.74	-	-	18.00	-	0.48	0.00	0.00	-	-	0.00	-	-	-
72	YELLOW PERCH	9.0	0.4	6.9	0.42	0.34	0.32	-	-	6.60	-	0.34	0.00	0.00	-	-	0.00	-	-	-
73	WHITE CATFISH	12.6	1.1	5.3	0.63	0.00	0.00	0.0	-	7.60	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	WHITE PERCH	10.1	0.6	5.5	0.59	0.00	0.00	0.0	-	7.70	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	WHITE PERCH	9.5	0.5	4.7	0.59	0.00	0.00	0.0	-	8.10	0.0	0.02	0.00	0.00	-	-	0.00	-	-	-
73	YELLOW PERCH	9.3	0.4	6.4	0.18	0.10	0.00	3.0	-	0.00	1.5	0.11	0.00	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	6.6	0.18	0.01	0.45	0.0	1.5	1.80	0.6	0.04	0.00	0.00	0.00	-	0.00	0.02	0.01	0.00
74	BROWN BULLHEAD	9.7	0.4	2.2	0.07	0.06	0.00	2.1	-	1.20	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	WHITE CATFISH	14.4	1.3	5.2	0.23	0.14	0.07	0.0	-	5.30	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	WHITE CATFISH	12.3	0.9	5.8	0.18	0.14	0.08	0.0	-	5.90	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	YELLOW PERCH	9.7	0.4	5.7	0.14	0.12	0.17	0.0	-	2.40	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	6.0	0.20	0.14	0.15	0.0	1.4	1.58	0.9	0.02	0.01	0.02	0.15	0.04	0.00	0.02	0.05	0.00

STATION 3, HUDSON RIVER AT POUGHKEEPSIE, NY

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	GOLDFISH	8.4	0.5	11.5	0.70	0.94	0.65	-	-	5.73	-	0.09	0.00	0.00	-	-	-	-	0.38	-
70	GOLDFISH	10.5	1.0	16.5	1.02	1.98	1.46	-	-	13.50	-	0.19	0.00	0.00	-	-	-	-	1.21	-
70	CROSSCHECK	-	-	15.5	0.59	0.85	0.12	-	173.0	32.00	0.0	0.41	0.00	1.28	-	-	0.00	-	-	-
70	LARGEMOUTH BASS	12.8	1.3	4.0	0.68	1.54	1.22	-	-	9.37	-	0.03	0.00	0.00	-	-	-	-	0.26	-
70	PUMPKINSEED	6.2	0.2	1.7	0.12	0.23	0.23	-	-	1.77	-	0.03	0.00	0.00	-	-	-	-	0.09	-
71	GOLDFISH	9.4	0.8	6.9	0.78	1.30	0.61	-	-	40.40	-	0.02	0.00	0.00	-	-	0.00	-	-	-
71	CROSSCHECK	-	-	8.0	0.04	0.48	0.01	-	66.0	8.00	1.8	0.08	0.00	0.00	0.16	-	0.00	0.00	-	-
71	GOLDFISH	9.9	0.8	4.7	0.56	0.74	0.46	-	-	13.70	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	10.9	0.9	3.9	0.12	0.29	0.12	-	-	28.00	-	0.02	0.00	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	10.8	0.9	4.7	0.52	1.01	0.46	-	-	41.00	-	0.04	0.00	0.00	-	-	0.00	-	-	-
71	CROSSCHECK	-	-	5.2	0.02	0.40	0.12	-	78.0	12.00	2.8	0.09	0.00	0.16	0.00	-	0.00	0.00	-	-
71	PUMPKINSEED	6.1	0.1	0.7	0.13	0.21	0.14	-	-	6.20	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	PUMPKINSEED	6.0	0.2	2.0	0.14	0.18	0.09	-	-	0.69	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	GOLDFISH	11.9	1.1	15.1	0.00	0.57	0.00	-	-	25.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	CROSSCHECK	-	-	17.2	1.24	0.59	0.08	-	108.0	8.00	2.0	0.13	0.00	0.00	0.20	-	0.00	0.00	-	-
72	GOLDFISH	10.1	0.6	14.8	0.00	1.00	0.00	-	-	17.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	10.5	0.6	3.3	0.00	0.17	0.00	-	-	13.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	CROSSCHECK	-	-	3.6	0.45	0.23	0.19	-	52.0	7.60	1.8	0.03	0.00	0.00	0.13	-	0.00	0.01	-	-
72	PUMPKINSEED	5.8	0.1	0.7	0.20	0.01	0.00	-	-	2.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	GOLDFISH	10.6	1.0	9.3	0.00	0.00	0.00	0.0	-	25.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	11.5	0.17	0.04	0.08	0.0	63.5	4.00	1.6	0.01	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00
73	LARGEMOUTH BASS	11.9	0.9	3.1	0.00	0.00	0.00	0.0	-	22.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	4.8	0.12	0.12	0.16	0.0	52.0	50.00	2.0	0.03	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00
73	PUMPKINSEED	5.8	0.1	3.8	0.10	0.00	0.00	0.0	-	3.20	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	PUMPKINSEED	5.6	0.1	3.2	0.20	0.00	0.00	0.0	-	5.60	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	GOLDFISH	10.1	0.9	17.0	5.40	1.40	0.00	0.0	-	75.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	GOLDFISH	11.5	1.1	6.8	2.70	4.20	0.00	0.0	-	30.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	LARGEMOUTH BASS	11.1	1.1	5.4	0.78	0.40	0.00	0.0	-	13.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	4.9	0.43	0.27	0.04	0.0	41.3	8.42	0.0	0.04	0.01	0.00	0.10	0.00	0.00	0.00	0.01	0.01
74	PUMPKINSEED	6.0	0.2	3.2	1.60	0.51	0.00	0.0	-	25.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 54, RARITAN RIVER AT HIGHLAND PARK, NJ

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	GOLDEN SHINER	5.9	0.1	5.4	0.94	2.29	0.52	-	-	7.29	-	0.36	0.00	0.00	-	-	-	-	0.10	-
70	CROSSCHECK	-	-	4.7	0.11	0.66	0.00	-	3.1	1.50	1.3	0.05	0.00	0.00	-	-	0.00	-	-	-
70	ROCK BASS	6.9	0.2	6.7	0.40	0.61	0.43	-	-	2.21	-	0.35	0.00	0.00	-	-	-	-	0.20	-
70	WHITE PERCH	9.1	0.5	7.3	1.08	1.09	0.83	-	-	4.04	-	0.41	0.00	0.00	-	-	-	-	0.20	-
70	WHITE PERCH	8.3	0.3	5.9	0.91	1.18	0.73	-	-	4.04	-	0.05	0.00	0.00	-	-	-	-	0.19	-
71	GOLDEN SHINER	7.6	0.2	4.5	0.26	0.38	0.12	-	-	0.89	-	0.06	0.01	0.00	-	-	0.00	-	-	-
71	GOLDEN SHINER	6.3	0.1	7.1	0.51	0.72	0.28	-	-	1.82	-	0.09	0.00	0.00	-	-	0.00	-	-	-
71	WHITE PERCH	9.7	0.7	9.8	0.99	1.20	0.59	-	-	3.65	-	0.04	0.00	0.00	-	-	0.00	-	-	-
71	WHITE PERCH	9.6	0.6	8.9	0.83	0.10	0.51	-	-	2.99	-	0.34	0.01	0.00	-	-	0.00	-	-	-
71	CROSSCHECK	-	-	9.1	0.90	0.79	0.75	-	3.3	2.30	1.4	0.31	0.05	0.00	0.00	-	0.00	0.04	-	-
71	WHITE SUCKER	13.4	1.2	4.7	0.60	0.56	0.26	-	-	2.08	-	0.05	0.01	0.00	-	-	0.00	-	-	-
71	WHITE SUCKER	12.3	1.0	4.5	0.33	0.47	0.26	-	-	2.08	-	0.06	0.01	0.00	-	-	0.00	-	-	-
72	GOLDEN SHINER	7.3	0.2	3.5	0.33	0.26	0.00	-	-	1.50	-	0.09	0.00	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	9.7	0.5	4.3	0.14	0.23	0.07	-	-	4.90	-	0.13	0.00	0.00	-	-	0.00	-	-	-
72	WHITE PERCH	7.2	0.3	3.9	0.52	0.30	0.15	-	-	2.30	-	0.09	0.00	0.00	-	-	0.00	-	-	-
72	WHITE PERCH	6.7	0.3	6.0	0.60	0.63	0.32	-	-	3.20	-	0.11	0.00	0.00	-	-	0.00	-	-	-
73	CARP	11.5	0.9	3.1	0.00	0.00	0.00	1.3	-	0.00	0.8	0.00	0.00	0.00	-	-	0.00	-	-	-
73	GOLDEN SHINER	6.7	0.1	5.7	0.18	0.29	0.00	1.4	-	2.10	0.0	0.00	0.07	0.00	-	-	0.00	-	-	-
73	GOLDEN SHINER	6.6	0.1	4.5	0.40	0.24	0.00	0.0	-	0.00	1.5	0.00	0.05	0.00	-	-	0.00	-	-	-
73	WHITE PERCH	8.0	0.3	4.9	0.00	0.00	0.00	1.3	-	0.00	2.6	0.00	0.13	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	6.2	0.30	0.26	0.30	1.3	0.0	1.80	0.8	0.07	0.00	0.16	3.40	-	0.00	0.03	0.16	0.00

STATION 4, DELAWARE RIVER AT CAMDEN, NJ/PA

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	BROWN BULLHEAD	10.6	0.6	13.6	1.28	0.59	0.21	-	-	1.62	-	0.17	0.00	0.00	-	-	-	-	0.10	-
70	WHITE PERCH	9.8	0.6	10.1	3.65	2.80	0.52	-	-	4.17	-	0.21	0.00	0.00	-	-	-	-	0.05	-
70	CROSSCHECK	-	-	8.1	3.38	3.75	0.37	-	2.0	7.20	2.6	0.36	0.00	0.00	-	-	0.00	-	-	-
70	WHITE PERCH	9.7	0.6	10.1	3.84	3.06	0.56	-	-	4.43	-	0.19	0.00	0.00	-	-	-	-	0.05	-
70	CROSSCHECK	-	-	9.6	6.03	4.37	0.46	-	8.0	6.80	3.9	0.28	0.00	0.01	-	-	0.00	-	-	-
70	WHITE SUCKER	14.7	1.4	5.8	1.00	1.17	0.45	-	-	3.39	-	0.07	0.00	0.00	-	-	-	-	0.04	-
71	BROWN BULLHEAD	11.7	0.8	10.4	0.69	0.77	0.16	-	-	1.04	-	0.12	0.01	0.00	-	-	0.00	-	-	-
71	BROWN BULLHEAD	10.9	0.7	11.1	0.67	0.91	0.13	-	-	0.83	-	0.09	0.01	0.00	-	-	0.00	-	-	-
71	WHITE PERCH	9.5	0.5	7.4	2.71	1.78	0.29	-	-	2.08	-	0.12	0.01	0.00	-	-	0.00	-	-	-
71	WHITE PERCH	9.8	0.6	7.7	2.28	1.50	0.37	-	-	3.13	-	0.06	0.01	0.00	-	-	0.00	-	-	-
71	CROSSCHECK	-	-	8.4	2.90	1.33	0.33	-	1.9	4.30	2.8	0.16	0.01	0.00	0.00	-	0.00	0.02	-	-
71	WHITE SUCKER	14.6	1.3	4.8	0.83	0.69	0.20	-	-	1.56	-	0.07	0.01	0.00	-	-	0.00	-	-	-
71	WHITE SUCKER	13.9	1.2	7.1	0.73	0.56	0.21	-	-	1.56	-	0.06	0.01	0.00	-	-	0.00	-	-	-
72	BROWN BULLHEAD	11.5	0.9	11.0	0.90	0.90	0.00	-	-	6.00	-	0.16	0.00	0.00	-	-	0.00	-	-	-
72	WHITE PERCH	11.1	0.5	5.4	2.40	1.20	0.01	-	-	8.00	-	0.10	0.00	0.00	-	-	0.00	-	-	-
72	CROSSCHECK	-	-	5.4	2.98	1.28	0.28	-	3.0	3.30	2.2	0.17	0.00	0.00	0.17	-	0.00	0.00	-	-
72	WHITE PERCH	9.9	0.5	6.7	4.00	1.50	0.01	-	-	14.00	-	0.15	0.00	0.00	-	-	0.00	-	-	-
72	WHITE SUCKER	15.0	1.5	5.5	0.75	0.60	0.04	-	-	7.00	-	0.09	0.00	0.00	-	-	0.00	-	-	-
73	BROWN BULLHEAD	9.7	0.8	10.5	0.90	1.50	0.00	0.0	-	3.90	0.0	0.10	0.00	0.00	-	-	0.00	-	-	-
73	WHITE PERCH	9.0	0.4	5.8	2.30	0.00	0.00	0.0	-	12.00	0.0	0.01	0.00	0.00	-	-	0.00	-	-	-
73	WHITE PERCH	9.1	0.4	4.9	2.40	1.20	0.00	0.0	-	7.20	0.0	0.24	0.00	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	5.1	1.18	0.37	0.12	0.0	1.5	4.50	2.2	0.04	0.00	0.00	0.00	-	0.00	0.04	0.05	0.01
73	WHITE SUCKER	14.5	1.3	7.0	0.64	0.54	0.00	0.0	-	5.80	0.0	0.11	0.00	0.00	-	-	0.00	-	-	-

STATION 5, SUSQUEHANNA RIVER AT CONOWINGO DAM, MD

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	CARP	21.6	5.0	7.9	0.52	0.65	0.23	-	-	2.60	-	0.23	0.00	0.00	-	-	-	-	0.06	-
70	CHANNEL CATFISH	12.1	0.6	7.4	0.24	0.29	0.18	-	-	1.77	-	0.16	0.00	0.00	-	-	-	-	0.06	-
70	YELLOW PERCH	8.8	0.3	1.4	0.43	0.31	0.25	-	-	2.19	-	0.12	0.00	0.00	-	-	-	-	0.02	-
70	YELLOW PERCH	7.9	0.2	2.0	0.43	0.39	0.31	-	-	2.60	-	0.13	0.00	0.00	-	-	-	-	0.09	-
71	CARP	18.0	3.0	5.4	0.23	0.18	0.09	-	-	0.80	-	0.07	0.01	0.00	-	-	0.00	-	-	-
71	CARP	18.9	3.3	8.5	0.20	0.21	0.07	-	-	0.59	-	0.11	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	15.2	1.1	9.6	0.24	0.20	0.10	-	-	0.92	-	0.09	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	15.4	1.3	9.6	0.34	0.30	0.12	-	-	1.01	-	0.08	0.01	0.00	-	-	0.00	-	-	-
71	YELLOW PERCH	8.6	0.3	2.7	0.18	0.14	0.11	-	-	0.95	-	0.07	0.01	0.00	-	-	0.00	-	-	-
71	YELLOW PERCH	8.4	0.3	2.5	0.19	0.14	0.11	-	-	0.95	-	0.06	0.01	0.00	-	-	0.00	-	-	-
72	CARP	14.8	1.7	1.4	0.18	0.23	0.00	-	-	2.00	-	0.04	0.00	0.00	-	-	0.00	-	-	-
72	CHANNEL CATF.SH	13.1	0.8	4.5	0.57	0.31	0.07	-	-	4.50	-	0.11	0.00	0.00	-	-	0.00	-	-	-
72	YELLOW PERCH	7.5	0.2	2.9	0.29	0.05	0.00	-	-	1.90	-	0.12	0.00	0.00	-	-	0.00	-	-	-
72	YELLOW PERCH	7.5	0.3	2.7	0.22	0.13	0.02	-	-	2.00	-	0.14	0.00	0.00	-	-	0.00	-	-	-
73	CARP	14.9	1.6	8.8	0.28	0.00	0.00	0.0	-	0.00	0.6	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	16.1	1.4	9.8	0.00	0.00	0.00	0.4	-	0.00	2.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	WHITE PERCH	7.6	0.2	1.2	0.16	0.00	0.00	0.0	-	0.00	0.7	0.04	0.00	0.00	-	-	0.00	-	-	-
73	WHITE PERCH	7.5	0.2	4.9	0.10	0.00	0.00	0.0	-	0.00	0.5	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CARP	16.7	2.3	4.9	0.37	0.13	0.00	0.0	-	0.00	1.1	0.07	0.00	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	13.2	1.1	13.1	1.50	7.60	0.00	0.0	-	0.00	5.9	3.30	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	15.0	0.18	0.24	0.02	0.0	0.0	0.73	0.7	0.06	0.01	0.02	0.12	0.03	0.00	0.00	0.03	0.00
74	CHANNEL CATFISH	13.4	0.8	12.7	0.52	0.51	0.00	0.0	-	0.00	2.8	0.18	0.00	0.00	-	-	0.00	-	-	-
74	WHITE PERCH	5.8	0.1	7.2	0.54	0.20	0.09	0.0	-	0.00	3.2	0.23	0.00	0.00	-	-	0.00	-	-	-
74	WHITE PERCH	6.3	0.9	7.2	0.54	0.21	0.08	0.0	-	0.00	3.1	0.20	0.00	0.00	-	-	0.00	-	-	-

STATION 6, POTOMAC RIVER AT LITTLE FALLS, MD/VA

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES			PCB'S (AROCLOR MIXTURES)				CYCLODIENE INSECTICIDES					OTHER COMPOUNDS			
					DDE	DDD	DDT	1242	1248	1254	1260	DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	TOXAPHENE	HCB	A-BHC	G-BHC
70	BLACK CRAPPIE	8.7	0.3	2.5	0.11	0.11	0.08	-	-	0.87	-	0.03	0.00	0.00	-	-	-	-	0.01	-
70	CARP	13.8	1.3	7.6	0.10	0.13	0.06	-	-	0.68	-	0.05	0.00	0.00	-	-	-	-	0.01	-
70	CARP	14.1	1.1	7.9	0.11	0.13	0.05	-	-	0.59	-	0.07	0.00	0.00	-	-	-	-	0.01	-
70	WHITE SUCKER	11.5	0.7	3.8	0.04	0.07	0.04	-	-	0.32	-	0.02	0.00	0.00	-	-	-	-	0.01	-
71	CARP	17.2	2.6	5.6	0.23	0.14	0.08	-	-	0.87	-	0.02	0.01	0.00	-	-	0.00	-	-	-
71	CARP	15.7	2.0	6.4	0.18	0.15	0.07	-	-	0.75	-	0.03	0.01	0.00	-	-	0.00	-	-	-
71	REDHORSE	13.5	1.0	5.9	0.12	0.13	0.09	-	-	0.80	-	0.03	0.01	0.00	-	-	0.00	-	-	-
71	REDHORSE	14.7	1.2	4.8	0.12	0.11	0.09	-	-	0.96	-	0.02	0.01	0.00	-	-	0.00	-	-	-
71	SMALLMOUTH BASS	14.1	1.4	3.6	0.15	0.13	0.12	-	-	1.22	-	0.02	0.01	0.00	-	-	0.00	-	-	-
71	SMALLMOUTH BASS	10.2	0.5	1.8	0.10	0.08	0.07	-	-	0.71	-	0.01	0.01	0.00	-	-	0.00	-	-	-
72	CARP	14.2	1.4	7.1	0.23	0.18	0.00	-	-	1.10	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	REDHORSE	13.3	2.2	7.6	0.17	0.12	0.04	-	-	0.00	-	0.04	0.00	0.00	-	-	0.00	-	-	-
72	REDHORSE	13.2	1.0	4.2	0.31	0.19	0.18	-	-	0.00	-	0.04	0.00	0.00	-	-	0.00	-	-	-
72	SMALLMOUTH BASS	16.2	1.9	4.0	0.18	0.03	0.00	-	-	2.50	-	0.02	0.00	0.00	-	-	0.00	-	-	-
72	REDBREAST SUNFISH	6.6	0.2	3.4	0.04	0.01	0.00	-	-	0.50	-	0.02	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	14.4	0.9	10.4	0.13	0.00	0.00	0.0	-	0.60	0.0	0.13	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	11.2	0.4	2.3	0.13	0.00	0.00	0.0	-	0.00	0.4	0.02	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	7.9	0.2	2.0	0.02	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	8.2	0.2	2.4	0.02	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	REDHORSE	14.0	1.2	10.0	0.17	0.18	0.00	0.0	-	1.00	0.0	0.09	0.00	0.00	-	-	0.00	-	-	-

STATION 55, JAMES RIVER AT RICHMOND, VA

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES			PCB'S (AROCLOR MIXTURES)				CYCLODIENE INSECTICIDES					OTHER COMPOUNDS			
					DDE	DDD	DDT	1242	1248	1254	1260	DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	TOXAPHENE	HCB	A-BHC	G-BHC
70	CHANNEL CATFISH	18.8	2.5	7.9	0.21	0.20	0.16	-	-	0.62	-	0.47	0.00	0.00	-	-	-	-	0.01	-
70	CROSSCHECK	-	-	8.0	0.16	0.38	0.26	-	1.1	0.70	0.0	0.69	0.00	0.00	-	-	0.00	-	-	-
70	CHANNEL CATFISH	17.3	2.5	0.9	0.33	0.11	0.12	-	-	0.97	-	0.10	0.00	0.00	-	-	-	-	0.01	-
70	LARGEMOUTH BASS	10.0	0.7	2.0	0.13	0.09	0.05	-	-	0.34	-	0.12	0.00	0.00	-	-	-	-	0.01	-
70	REDHORSE	10.8	0.7	8.7	0.15	0.15	0.10	-	-	0.45	-	0.40	0.00	0.00	-	-	-	-	0.01	-
71	CHANNEL CATFISH	21.5	3.6	3.2	0.25	0.16	0.14	-	-	0.58	-	0.12	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	17.0	1.4	9.8	0.22	0.12	0.10	-	-	0.30	-	0.21	0.01	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	11.6	0.9	4.7	0.14	0.08	0.07	-	-	0.32	-	0.07	0.01	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	8.6	0.3	1.5	0.11	0.06	0.06	-	-	0.35	-	0.06	0.01	0.00	-	-	0.00	-	-	-
71	REDHORSE	16.5	1.8	11.8	0.33	0.39	0.24	-	-	0.63	-	0.44	0.01	0.00	-	-	0.00	-	-	-
71	CROSSCHECK	-	-	12.1	0.54	0.54	0.52	-	0.0	1.40	0.7	0.85	0.02	0.01	0.10	-	0.00	0.01	-	-
71	REDHORSE	16.0	1.6	10.1	0.15	0.18	0.14	-	-	0.30	-	0.29	0.01	0.00	-	-	0.00	-	-	-
72	REDHORSE	16.2	1.9	2.7	0.06	0.00	0.00	-	-	0.00	-	0.04	0.00	0.00	-	-	0.00	-	-	-
72	WHITE SUCKER	16.2	2.0	3.9	0.04	0.02	0.00	-	-	0.00	-	0.08	0.00	0.00	-	-	0.00	-	-	-
72	RIVER CHUB	11.5	0.7	4.0	0.09	0.00	0.00	-	-	0.00	-	0.13	0.00	0.00	-	-	0.00	-	-	-
72	RIVER CHUB	12.5	0.9	4.5	0.29	0.37	0.59	-	-	0.00	-	0.11	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	17.4	1.7	3.4	0.10	0.00	0.00	0.0	-	1.30	0.0	0.03	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	19.7	2.3	1.8	0.08	0.05	0.03	0.0	-	0.70	0.0	0.02	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	11.7	0.9	2.3	0.12	0.04	0.00	0.0	-	1.50	0.0	0.06	0.00	0.00	-	-	0.00	-	-	-
73	REDHORSE	15.8	1.9	15.9	0.27	0.28	0.00	0.0	-	3.80	0.0	0.24	0.00	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	16.8	2.0	11.0	0.15	0.08	0.08	0.0	-	0.97	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	19.3	3.0	6.1	0.20	0.00	0.00	0.0	-	1.20	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	LARGEMOUTH BASS	11.8	1.0	3.5	0.11	0.00	0.00	0.0	-	0.67	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	REDHORSE	16.1	2.2	22.1	0.82	0.61	0.65	0.0	-	0.00	4.2	0.39	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	29.0	0.52	0.35	0.33	0.0	0.0	2.06	0.0	0.24	0.03	0.06	0.25	0.00	0.00	0.01	0.13	0.00

STATION 7, ROANOKE RIVER AT ROANOKE RAPIDS, NC

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES			PCB'S (AROCLOR MIXTURES)				CYCLODIENE INSECTICIDES					OTHER COMPOUNDS			
					DDE	DDD	DDT	1242	1248	1254	1260	DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	TOXAPHENE	HCB	A-BHC	G-BHC
70	BROWN BULLHEAD	9.6	0.3	1.5	0.26	0.13	0.05	-	-	0.19	-	0.03	0.00	0.00	-	-	-	-	0.01	-
70	LARGEMOUTH BASS	12.0	1.0	2.0	0.62	0.35	0.37	-	-	0.89	-	0.08	0.00	0.00	-	-	-	-	0.01	-
70	REDHORSE	21.7	3.7	5.0	0.40	0.35	0.19	-	-	0.92	-	0.07	0.00	0.00	-	-	-	-	0.02	-
70	REDHORSE	20.7	3.2	4.0	0.39	0.34	0.15	-	-	0.60	-	0.07	0.01	0.00	-	-	-	-	0.02	-
71	BROWN BULLHEAD	9.7	0.3	0.4	0.20	0.05	0.03	-	-	0.07	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	10.5	0.7	5.0	0.38	0.34	0.46	-	-	0.34	-	0.07	0.01	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	9.3	0.5	4.6	0.46	0.38	0.59	-	-	0.40	-	0.07	0.01	0.00	-	-	0.00	-	-	-
71	REDHORSE	18.7	2.5	6.1	0.34	0.31	0.17	-	-	0.49	-	0.04	0.01	0.00	-	-	0.00	-	-	-
71	REDHORSE	19.8	2.9	4.4	0.32	0.31	0.21	-	-	0.70	-	0.05	0.01	0.00	-	-	0.00	-	-	-
72	BLUEGILL	7.2	0.3	4.0	0.60	0.17	0.61	-	-	0.00	-	0.11	0.00	0.00	-	-	0.00	-	-	-
72	BLUEGILL	6.4	0.2	2.2	0.29	0.09	0.35	-	-	0.00	-	0.06	0.00	0.00	-	-	0.00	-	-	-
72	CARP	19.4	3.5	5.4	1.20	0.24	0.11	-	-	0.60	-	0.11	0.00	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	11.3	0.9	4.9	0.90	0.37	0.53	-	-	1.40	-	0.22	0.00	0.00	-	-	0.00	-	-	-
72	WHITE CATFISH	9.3	0.3	1.6	0.34	0.05	0.09	-	-	0.30	-	0.04	0.00	0.00	-	-	0.00	-	-	-
73	CARP	19.0	3.2	2.7	0.54	0.18	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	17.8	2.4	1.9	0.26	0.10	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	12.9	0.6	2.8	0.52	0.23	0.17	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	9.6	0.4	1.5	0.27	0.13	0.09	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CARP	17.1	2.2	1.5	0.17	0.04	0.00	0.0	-	0.20	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CARP	16.2	1.9	2.8	0.12	0.02	0.00	0.0	-	0.10	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	17.3	1.8	5.1	0.53	0.00	0.00	0.0	-	1.10	0.0	0.00	0.00	0.00	-	-	1.80	-	-	-
74	LARGEMOUTH BASS	12.3	1.0	3.1	0.71	0.00	0.00	0.0	-	0.17	0.0	0.00	0.00	0.00	-	-	1.80	-	-	-

STATION 8, CAPE FEAR RIVER AT ELIZABETHTOWN, NC

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES			PCB'S (AROCLOR MIXTURES)				CYCLODIENE INSECTICIDES					OTHER COMPOUNDS			
					DDE	DDD	DDT	1242	1248	1254	1260	DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	TOXAPHENE	HCB	A-BHC	G-BHC
70	BROWN BULLHEAD	8.2	0.3	2.2	0.17	0.20	0.10	-	-	0.68	-	0.03	0.00	0.00	-	-	-	-	0.15	-
70	BROWN BULLHEAD	8.2	0.3	3.4	0.27	0.30	0.17	-	-	1.38	-	0.04	0.00	0.00	-	-	-	-	0.20	-
70	GIZZARD SHAD	6.2	0.2	5.4	0.23	0.28	0.12	-	-	1.19	-	0.07	0.00	0.00	-	-	-	-	0.35	-
70	CROSSCHECK	-	-	6.2	0.15	0.46	0.11	-	0.0	2.60	1.1	0.09	0.00	0.00	-	-	0.00	-	-	-
70	LARGEMOUTH BASS	13.2	1.3	2.3	0.55	0.55	0.26	-	-	3.33	-	0.07	0.00	0.00	-	-	-	-	0.06	-
71	BROWN BULLHEAD	9.5	0.3	1.9	0.12	0.12	0.05	-	-	0.19	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	BROWN BULLHEAD	9.6	0.3	1.0	0.07	0.07	0.04	-	-	0.20	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	GIZZARD SHAD	8.7	0.2	0.3	0.05	0.04	0.02	-	-	0.17	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	GIZZARD SHAD	10.0	0.4	0.7	0.17	0.19	0.10	-	-	0.94	-	0.02	0.01	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	11.1	3.6	6.4	0.20	0.28	0.15	-	-	0.81	-	0.06	0.01	0.00	-	-	0.00	-	-	-
72	BROWN BULLHEAD	10.6	0.5	2.3	0.02	0.03	0.01	-	-	0.15	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	BROWN BULLHEAD	10.3	0.5	2.3	0.07	0.14	0.04	-	-	0.75	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	GIZZARD SHAD	9.6	0.5	1.6	0.07	0.11	0.04	-	-	0.90	-	0.04	0.00	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	11.0	0.8	2.9	0.31	0.45	0.16	-	-	3.90	-	0.11	0.00	0.00	-	-	0.00	-	-	-
73	GIZZARD SHAD	12.7	1.0	11.9	0.14	0.18	0.00	0.0	-	0.00	0.0	0.00	0.02	0.00	-	-	0.80	-	-	-
73	LARGEMOUTH BASS	10.3	0.5	3.2	0.16	0.13	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	1.80	-	-	-
73	WHITE CATFISH	15.6	1.6	3.5	0.45	0.42	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	3.10	-	-	-
73	YELLOW BULLHEAD	8.4	0.4	1.4	0.08	0.04	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.70	-	-	-
73	YELLOW BULLHEAD	8.4	0.4	0.1	0.11	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	1.90	-	-	-
74	BROWN BULLHEAD	11.0	0.5	2.1	0.09	0.05	0.00	0.0	-	0.00	0.4	0.02	0.00	0.00	-	-	0.50	-	-	-
74	GIZZARD SHAD	14.8	1.2	4.1	0.19	0.18	0.00	0.0	-	0.00	1.0	0.07	0.00	0.00	-	-	1.70	-	-	-
74	GIZZARD SHAD	14.6	1.3	2.4	0.25	0.17	0.00	0.0	-	0.00	1.6	0.06	0.00	0.00	-	-	1.50	-	-	-
74	LARGEMOUTH BASS	14.1	1.5	3.9	0.57	0.24	0.13	0.0	-	0.00	0.9	0.04	0.00	0.00	-	-	0.00	-	-	-

STATION 56, PEE DEE RIVER AT JOHNSONVILLE, SC

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	BLUEGILL	5.2	0.1	3.3	0.14	0.16	0.09	-	-	0.47	-	0.22	0.00	0.00	-	-	-	-	0.05	-
70	LARGEMOUTH BASS	12.5	1.5	5.4	0.21	0.22	0.17	-	-	0.62	-	0.24	0.00	0.00	-	-	-	-	0.02	-
70	CROSSCHECK	-	-	6.0	0.28	0.38	0.19	-	0.0	1.20	0.0	0.32	0.01	0.00	-	-	0.00	-	-	-
70	WHITE CATFISH	7.4	0.2	1.9	0.09	0.10	0.07	-	-	0.52	-	0.10	0.00	0.00	-	-	-	-	0.06	-
70	WHITE CATFISH	6.6	0.1	3.2	0.13	0.16	0.07	-	-	0.47	-	0.17	0.00	0.00	-	-	-	-	0.10	-
71	BLUEGILL	5.5	0.2	6.0	0.10	0.13	0.07	-	-	0.06	-	0.12	0.01	0.00	-	-	0.00	-	-	-
71	WHITE CATFISH	14.5	1.6	5.4	0.11	0.12	0.05	-	-	0.06	-	0.07	0.01	0.00	-	-	0.00	-	-	-
71	WHITE CATFISH	14.9	2.0	10.1	0.15	0.15	0.09	-	-	0.22	-	0.15	0.01	0.00	-	-	0.00	-	-	-
71	BOWFIN	18.5	2.5	6.3	0.14	0.11	0.06	-	-	0.08	-	0.17	0.01	0.00	-	-	0.00	-	-	-
71	BOWFIN	17.6	2.1	5.5	0.09	0.07	0.04	-	-	0.08	-	0.08	0.01	0.00	-	-	0.00	-	-	-
72	BLUEGILL	6.8	0.2	3.5	0.13	0.17	0.00	-	-	0.70	-	0.29	0.00	0.00	-	-	0.00	-	-	-
72	BLUEGILL	6.6	0.2	16.3	0.19	0.14	0.00	-	-	0.80	-	0.19	0.00	0.00	-	-	0.00	-	-	-
72	BROWN BULLHEAD	12.3	0.7	1.6	0.14	0.08	0.01	-	-	0.30	-	0.06	0.00	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	14.3	1.5	3.1	0.44	0.23	0.12	-	-	3.70	-	0.20	0.00	0.00	-	-	0.00	-	-	-
73	BLUEGILL	6.7	0.2	4.0	0.18	0.06	0.18	0.0	-	0.00	0.0	0.03	0.00	0.00	-	-	0.00	-	-	-
73	BLUEGILL	6.6	0.2	4.0	0.13	0.10	0.12	0.0	-	0.00	0.0	0.04	0.00	0.00	-	-	0.00	-	-	-
73	CARP	20.9	5.2	10.9	0.48	0.13	0.00	0.0	-	0.00	0.0	0.06	0.00	0.00	-	-	3.30	-	-	-
73	LARGEMOUTH BASS	13.4	1.6	7.0	0.34	0.18	0.17	0.0	-	0.50	0.0	0.07	0.00	0.00	-	-	0.00	-	-	-
74	BLUEGILL	6.1	0.3	6.9	0.13	0.09	0.00	0.0	-	0.40	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	LARGEMOUTH BASS	19.1	3.8	6.5	0.41	0.24	0.00	0.0	-	0.80	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	5.9	0.33	0.21	0.06	0.0	0.0	0.68	0.0	0.01	0.01	0.01	0.03	0.01	0.57	0.00	0.01	0.01
74	LARGEMOUTH BASS	9.7	0.6	2.0	0.12	0.06	0.00	0.0	-	0.30	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	WARMOUTH	7.7	0.6	1.6	0.04	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 9, COOPER RIVER AT LAKE MOULTRIE,MONCKS CORNER, SC

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	BLUEGILL	5.6	0.2	0.8	0.21	0.10	0.09	-	-	0.21	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	CARP	17.5	3.5	12.6	1.45	0.92	0.14	-	-	1.04	-	0.02	0.02	0.00	-	-	-	-	0.02	-
70	LARGEMOUTH BASS	11.3	0.6	2.0	1.20	0.53	0.62	-	-	0.52	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	LARGEMOUTH BASS	12.0	0.7	3.0	0.44	0.28	0.19	-	-	0.79	-	0.02	0.01	0.00	-	-	-	-	0.02	-
71	BLUEGILL	6.5	0.2	0.8	0.13	0.05	0.07	-	-	0.08	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	BLUEGILL	6.2	0.2	1.0	0.16	0.10	0.11	-	-	0.08	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	CARP	23.2	6.8	6.9	0.68	0.42	0.10	-	-	0.33	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	CARP	23.5	7.3	0.6	1.42	0.87	0.12	-	-	0.37	-	0.02	0.01	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	11.0	0.6	1.0	0.29	0.23	0.27	-	-	0.17	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	11.2	0.8	1.4	0.42	0.30	0.31	-	-	0.19	-	0.01	0.01	0.00	-	-	0.00	-	-	-
72	BLUEGILL	6.9	0.2	1.2	0.57	0.12	0.25	-	-	0.20	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	BLUEGILL	6.3	0.2	1.1	0.44	0.09	0.30	-	-	1.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	CARP	22.1	5.4	8.9	2.30	1.20	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	13.2	1.2	1.6	1.30	0.52	0.80	-	-	3.20	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	BLUEGILL	6.5	0.1	6.8	0.33	0.06	0.09	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	21.3	3.1	2.4	0.77	0.03	0.00	0.0	-	1.30	0.0	0.00	0.01	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	13.7	1.3	3.6	0.40	0.06	0.28	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	13.6	1.3	6.3	0.86	0.30	0.76	0.0	-	3.30	0.0	0.01	0.00	0.00	-	-	0.00	-	-	-
74	LARGEMOUTH BASS	9.3	0.5	2.9	0.34	0.12	0.00	0.0	-	0.00	0.2	0.00	0.00	0.00	-	-	5.00	-	-	-
74	LARGEMOUTH BASS	7.8	0.5	4.4	0.23	0.00	0.00	0.0	-	0.00	0.2	0.06	0.00	0.00	-	-	6.00	-	-	-
74	REDEAR SUNFISH	7.5	0.5	2.1	0.15	0.03	0.00	0.0	-	0.00	0.1	0.02	0.00	0.00	-	-	1.60	-	-	-

STATION 10, SAVANNAH RIVER AT SAVANNAH, GA/SC

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (X)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	BLUEGILL	8.3	0.5	2.2	0.07	0.06	0.04	-	-	0.25	-	0.17	0.00	0.00	-	-	-	-	0.01	-
70	CARP	26.0	6.9	2.0	0.47	0.45	0.27	-	-	2.92	-	0.10	0.00	0.00	-	-	-	-	0.01	-
70	LARGEMOUTH BASS	11.3	1.0	2.3	0.15	0.13	0.10	-	-	0.86	-	0.26	0.00	0.00	-	-	-	-	0.01	-
70	CROSSCHECK	-	-	2.4	0.05	0.14	0.11	-	0.0	0.90	0.0	0.41	0.00	0.00	-	-	0.00	-	-	-
70	LARGEMOUTH BASS	9.0	0.5	3.6	0.14	0.08	0.08	-	-	0.55	-	0.23	0.00	0.00	-	-	-	-	0.02	-
71	BLUEGILL	11.2	1.0	1.4	0.09	0.05	0.05	-	-	0.45	-	0.08	0.01	0.00	-	-	0.00	-	-	-
71	BLUEGILL	8.8	0.6	2.2	0.08	0.05	0.04	-	-	0.32	-	0.07	0.01	0.00	-	-	0.00	-	-	-
71	CARP	20.3	4.1	5.1	0.19	0.05	0.01	-	-	0.06	-	0.02	0.00	0.00	-	-	0.00	-	-	-
71	CARP	20.9	4.4	2.9	0.08	0.06	0.03	-	-	0.16	-	0.03	0.00	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	10.9	1.0	3.5	0.06	0.05	0.04	-	-	0.19	-	0.11	0.01	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	10.9	0.7	2.4	0.06	0.04	0.03	-	-	0.11	-	0.11	0.01	0.00	-	-	0.00	-	-	-
72	BLUEGILL	7.1	0.3	4.3	0.08	0.04	0.00	-	-	0.70	-	0.36	0.00	0.00	-	-	0.00	-	-	-
72	CHANNEL CATFISH	17.4	2.0	3.3	0.30	0.04	0.01	-	-	2.30	-	0.15	0.00	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	13.8	1.4	-	0.24	0.04	0.00	-	-	0.89	-	0.41	0.00	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	10.3	0.5	2.2	0.07	0.03	0.00	-	-	0.40	-	0.12	0.00	0.00	-	-	0.00	-	-	-
73	CARP	23.2	6.4	4.7	1.20	0.31	0.23	0.0	-	3.20	0.0	0.03	0.01	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	11.6	1.0	4.2	0.09	0.05	0.00	0.0	-	0.00	0.5	0.06	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	12.7	1.1	4.2	0.15	0.04	0.08	0.0	-	0.00	0.0	0.02	0.00	0.00	-	-	0.00	-	-	-
73	REDBREAST SUNFISH	6.8	0.2	2.8	0.05	0.05	0.10	0.0	-	0.00	0.0	0.03	0.01	0.00	-	-	0.00	-	-	-
74	BLUEGILL	6.7	0.2	1.9	0.01	0.01	0.02	0.0	-	0.00	0.0	0.02	0.00	0.00	-	-	0.00	-	-	-
74	LARGEMOUTH BASS	12.5	1.0	3.6	0.10	0.00	0.00	0.0	-	0.78	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	STRIPED MULLET	13.7	0.9	4.7	0.05	0.04	0.00	0.0	-	0.00	0.1	0.05	0.00	0.00	-	-	0.00	-	-	-
74	STRIPED MULLET	15.0	1.2	6.6	0.06	0.00	0.00	0.0	-	0.38	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 57, ALTAMAHA RIVER AT DOCTORTOWN, GA

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (X)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	BLUEGILL	8.2	0.4	3.4	0.20	0.16	0.14	-	-	0.89	-	0.23	0.00	0.00	-	-	-	-	0.01	-
70	LARGEMOUTH BASS	12.2	1.3	3.7	0.35	0.16	0.15	-	-	0.79	-	0.16	0.00	0.00	-	-	-	-	0.01	-
70	SPOTTED SUCKER	15.2	1.4	7.3	0.40	0.32	0.24	-	-	1.04	-	0.33	0.01	0.00	-	-	-	-	0.07	-
70	CROSSCHECK	-	-	8.6	0.16	0.32	0.15	-	0.0	0.80	0.0	0.52	0.00	0.00	-	-	0.00	-	-	-
70	SPOTTED SUCKER	11.2	0.7	1.9	0.15	0.12	0.07	-	-	0.28	-	0.18	0.00	0.00	-	-	-	-	0.02	-
71	BLUEGILL	7.6	0.4	5.3	0.08	0.08	0.06	-	-	0.17	-	0.04	0.01	0.00	-	-	0.00	-	-	-
71	BLUEGILL	7.4	0.4	4.4	0.16	0.07	0.05	-	-	0.27	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	13.4	1.3	2.2	0.16	0.13	0.10	-	-	0.30	-	0.06	0.00	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	12.2	1.1	4.7	0.21	0.13	0.12	-	-	0.25	-	0.04	0.01	0.00	-	-	0.00	-	-	-
71	SPOTTED SUCKER	17.2	2.2	9.6	0.15	0.13	0.11	-	-	0.29	-	0.05	0.01	0.00	-	-	0.00	-	-	-
71	SPOTTED SUCKER	18.2	2.7	11.4	0.19	0.20	0.12	-	-	0.21	-	0.12	0.01	0.00	-	-	0.00	-	-	-
72	BLUEGILL	5.9	0.2	3.8	0.13	0.05	0.04	-	-	0.00	-	0.04	0.00	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	15.8	2.5	8.6	0.52	0.22	0.00	-	-	1.20	-	0.14	0.00	0.00	-	-	0.00	-	-	-
72	SPOTTED SUCKER	17.5	2.1	6.9	0.68	0.30	0.36	-	-	1.00	-	0.11	0.00	0.00	-	-	0.00	-	-	-
72	SPOTTED SUCKER	15.5	1.5	9.9	0.29	0.16	0.12	-	-	0.49	-	0.14	0.00	0.00	-	-	0.00	-	-	-
73	BLUEGILL	8.4	0.5	6.8	0.47	0.11	0.28	0.0	-	0.00	0.0	0.03	0.01	0.00	-	-	1.40	-	-	-
73	BLUEGILL	8.2	0.5	9.8	0.29	0.07	0.29	0.0	-	0.00	0.0	0.03	0.00	0.00	-	-	1.70	-	-	-
73	LARGEMOUTH BASS	12.7	1.1	6.4	0.51	0.14	0.28	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	2.30	-	-	-
73	SPOTTED SUCKER	16.9	2.0	8.4	0.56	0.40	0.28	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	3.00	-	-	-
74	BLUEGILL	7.8	0.3	4.8	0.08	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	BLUEGILL	6.6	0.2	8.8	0.31	0.00	0.00	0.0	-	0.41	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	STRIPED MULLET	13.7	1.1	17.6	0.17	0.00	0.00	0.0	-	0.26	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	WHITE CATFISH	8.7	0.3	1.7	8.80	0.00	0.00	0.0	-	18.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	1.4	0.16	0.04	0.00	0.0	0.0	0.29	0.0	0.01	0.00	0.01	0.01	0.00	0.00	0.00	0.02	0.01

STATION 11, ST. JOHNS RIVER AT WELAKA, FL

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
70	CHANNEL CATFISH	9.0	0.3	5.0	0.02	0.03	0.02	-	-	0.20	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	CHANNEL CATFISH	8.0	0.2	3.4	0.02	0.03	0.02	-	-	0.16	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	LARGEMOUTH BASS	12.5	1.3	7.4	0.07	0.06	0.06	-	-	0.37	-	0.01	0.01	0.00	-	-	-	-	0.01	-
70	STRIPED MULLET	16.3	1.7	12.9	0.29	0.43	0.39	-	-	3.54	-	0.06	0.00	0.00	-	-	-	-	0.03	-
71	CHANNEL CATFISH	10.7	0.4	7.2	0.01	0.02	0.02	-	-	0.09	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	11.1	0.4	8.8	0.02	0.03	0.01	-	-	0.06	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	17.1	2.9	8.2	0.04	0.02	0.02	-	-	0.10	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	15.4	2.3	10.3	0.06	0.06	0.05	-	-	0.47	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	STRIPED MULLET	21.3	4.1	11.7	0.02	0.03	0.02	-	-	0.11	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	STRIPED MULLET	19.1	3.1	10.6	0.05	0.08	0.07	-	-	0.78	-	0.02	0.00	0.00	-	-	0.00	-	-	-
72	CHANNEL CATFISH	11.8	0.4	9.5	0.00	0.00	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	13.5	1.2	2.8	0.02	0.01	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	10.3	0.5	1.8	0.01	0.00	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	STRIPED MULLET	17.1	2.1	8.4	0.01	0.01	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	10.7	0.4	9.6	0.01	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	9.2	0.4	1.4	0.02	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	STRIPED MULLET	17.6	2.5	10.5	0.00	0.00	0.00	0.0	-	0.80	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	STRIPED MULLET	16.2	1.7	14.4	0.00	0.00	0.00	0.0	-	0.00	0.0	0.01	0.00	0.00	-	-	0.00	-	-	-

STATION 12, ST. LUCIE CANAL AT INDIANTOWN, FL

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
70	BLUEGILL	5.6	0.2	2.2	0.13	0.10	0.04	-	-	0.10	-	0.01	0.01	0.00	-	-	-	-	0.01	-
70	CHANNEL CATFISH	18.5	2.2	0.2	0.22	0.06	0.02	-	-	0.05	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	CHANNEL CATFISH	18.0	2.3	3.3	1.20	0.72	0.36	-	-	0.47	-	0.02	0.00	0.00	-	-	-	-	0.01	-
70	LARGEMOUTH BASS	11.2	0.9	3.7	0.96	0.47	0.35	-	-	0.62	-	0.03	0.00	0.00	-	-	-	-	0.01	-
71	BLUEGILL	6.5	0.2	1.8	0.06	0.07	0.09	-	-	0.03	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	BLUEGILL	6.4	0.2	2.6	0.12	0.16	0.14	-	-	0.25	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	16.6	1.8	2.0	0.37	0.45	0.08	-	-	0.14	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	21.8	3.8	1.1	0.19	0.23	0.04	-	-	0.04	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	11.5	1.2	2.9	0.25	0.22	0.07	-	-	0.09	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	12.4	1.2	5.3	0.23	0.17	0.06	-	-	0.07	-	0.01	0.01	0.00	-	-	0.00	-	-	-
72	BLUEGILL	6.1	0.2	1.6	0.05	0.05	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	14.3	1.5	1.7	0.90	0.30	0.15	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	WHITE CATFISH	13.5	1.4	7.1	0.13	0.16	0.03	-	-	0.00	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	WHITE CATFISH	11.6	0.8	7.1	0.26	0.30	0.03	-	-	0.00	-	0.01	0.00	0.00	-	-	0.00	-	-	-
73	BLUEGILL	8.5	0.4	2.0	0.14	0.07	0.07	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	16.2	1.6	10.3	0.19	0.20	0.03	0.0	-	0.00	0.0	0.13	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	10.6	0.5	4.3	0.18	0.11	0.00	0.0	-	0.00	0.0	0.16	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	13.2	1.0	4.3	0.22	0.34	0.09	0.0	-	0.00	0.0	0.13	0.00	0.00	-	-	0.00	-	-	-
74	BLUEGILL	8.9	0.4	1.4	2.00	0.03	0.00	0.0	-	0.40	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	14.6	0.9	6.4	0.23	0.12	0.00	0.0	-	0.10	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	LARGEMOUTH BASS	12.3	1.0	2.6	0.28	0.17	0.00	0.0	-	0.20	0.0	0.00	0.00	0.00	-	-	0.70	-	-	-
74	LARGEMOUTH BASS	10.4	0.5	1.9	0.14	0.05	0.00	0.0	-	0.10	0.0	0.00	0.00	0.00	-	-	0.40	-	-	-

STATION 58, SUWANEE RIVER AT OLD TOWN, FL

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES			PCB'S (AROCLOR MIXTURES)				CYCLODIENE INSECTICIDES					OTHER COMPOUNDS			
					DDE	DDD	DDT	1242	1248	1254	1260	DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	TOXAPHENE	HCB	A-BHC	G-BHC
70	LARGEMOUTH BASS	9.0	0.4	1.5	0.07	0.06	0.04	-	-	0.31	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	SPOTTED SUCKER	15.8	1.7	7.3	0.08	0.09	0.06	-	-	0.52	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	REDBREAST SUNFISH	7.0	0.5	6.0	0.09	0.08	0.05	-	-	0.42	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	REDBREAST SUNFISH	7.0	0.5	6.2	0.07	0.07	0.04	-	-	0.27	-	0.01	0.00	0.00	-	-	-	-	0.01	-
71	LARGEMOUTH BASS	13.4	1.6	5.8	0.07	0.07	0.05	-	-	0.26	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	12.1	1.4	5.3	0.12	0.11	0.07	-	-	0.44	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	SPOTTED SUCKER	12.5	1.0	7.1	0.05	0.09	0.06	-	-	0.44	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	SPOTTED SUCKER	13.8	1.4	7.2	0.05	0.08	0.04	-	-	0.26	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	REDBREAST SUNFISH	7.6	0.2	4.3	0.04	0.03	0.03	-	-	0.19	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	REDBREAST SUNFISH	7.9	0.3	7.1	0.01	0.04	0.02	-	-	0.10	-	0.01	0.01	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	11.5	0.7	1.9	0.03	0.00	0.00	-	-	0.50	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	SPOTTED SUCKER	16.8	1.8	5.6	0.04	0.00	0.00	-	-	0.60	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	SPOTTED SUCKER	14.1	1.2	5.0	0.01	0.00	0.00	-	-	0.30	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	REDBREAST SUNFISH	5.9	0.1	2.3	0.02	0.01	0.00	-	-	0.30	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	10.7	0.6	4.2	0.06	0.00	0.00	0.0	-	0.30	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	SPOTTED SUCKER	14.5	1.6	12.2	0.08	0.09	0.02	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	SPOTTED SUCKER	14.6	1.6	13.7	0.05	0.06	0.02	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	REDBREAST SUNFISH	7.2	0.3	8.7	0.07	0.08	0.02	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 13, APALACHICOLA RIVER AT J. WOODRUFF DAM, FL

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES			PCB'S (AROCLOR MIXTURES)				CYCLODIENE INSECTICIDES					OTHER COMPOUNDS			
					DDE	DDD	DDT	1242	1248	1254	1260	DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	TOXAPHENE	HCB	A-BHC	G-BHC
70	CHANNEL CATFISH	11.0	0.7	1.9	0.34	0.24	0.08	-	-	0.67	-	0.03	0.00	0.00	-	-	-	-	0.01	-
70	LARGEMOUTH BASS	10.8	0.7	3.7	0.31	0.23	0.14	-	-	0.45	-	0.08	0.00	0.00	-	-	-	-	0.01	-
70	LARGEMOUTH BASS	9.4	0.5	2.0	0.38	0.26	0.14	-	-	0.61	-	0.06	0.00	0.00	-	-	-	-	0.01	-
70	SPOTTED SUCKER	17.3	2.5	5.6	0.34	0.31	0.21	-	-	0.35	-	0.11	0.00	0.00	-	-	-	-	0.02	-
71	CHANNEL CATFISH	10.8	0.7	4.3	0.36	0.39	0.14	-	-	0.83	-	0.03	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	9.7	0.5	3.4	0.29	0.25	0.09	-	-	0.42	-	0.02	0.01	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	10.0	0.5	2.1	0.02	0.01	0.01	-	-	0.02	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	9.4	0.4	4.6	0.30	0.25	0.13	-	-	0.23	-	0.02	0.01	0.00	-	-	0.00	-	-	-
71	SPOTTED SUCKER	15.6	2.1	16.8	0.33	0.37	0.19	-	-	0.37	-	0.09	0.01	0.00	-	-	0.00	-	-	-
72	CARP	22.6	6.9	9.3	2.62	0.91	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	1.00	-	-	-
72	CARP	25.7	9.0	7.3	1.48	0.59	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	1.38	-	-	-
72	LARGEMOUTH BASS	14.1	1.4	4.2	1.20	0.00	0.00	-	-	2.50	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	SPOTTED SUCKER	19.0	2.9	5.3	0.26	0.22	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.91	-	-	-
73	CHANNEL CATFISH	11.0	0.4	4.4	0.54	0.25	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	13.5	1.3	5.6	0.78	0.28	0.00	0.0	-	0.00	0.0	0.05	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	15.0	1.9	5.3	0.86	0.30	0.00	0.0	-	0.00	0.0	0.04	0.00	0.00	-	-	0.00	-	-	-
73	SPOTTED SUCKER	19.3	2.7	3.5	0.43	0.18	0.00	0.0	-	0.70	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	BLUEGILL	7.4	0.3	5.2	0.39	0.10	0.00	0.0	-	0.60	0.0	0.00	0.00	0.00	-	-	1.40	-	-	-
74	CHANNEL CATFISH	15.5	1.3	6.1	0.80	0.24	0.00	0.0	-	0.80	0.0	0.00	0.00	0.00	-	-	2.20	-	-	-
74	LARGEMOUTH BASS	12.7	1.4	7.1	0.72	0.13	0.00	0.0	-	1.30	0.0	0.00	0.00	0.00	-	-	3.50	-	-	-
74	CROSSCHECK	-	-	7.1	0.30	0.16	0.09	0.0	0.0	0.71	0.5	0.01	0.01	0.01	0.10	0.00	1.41	0.00	0.01	0.01
74	LARGEMOUTH BASS	11.0	0.7	3.8	0.58	0.95	0.00	0.0	-	0.50	0.0	0.00	0.00	0.00	-	-	2.30	-	-	-

STATION 59, ALABAMA RIVER AT CHRYSLER, AL

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
70	BLUEGILL	6.6	0.3	1.8	0.63	0.29	0.28	-	-	2.14	-	0.01	0.02	0.00	-	-	-	-	0.02	-
70	LARGEMOUTH BASS	17.3	2.6	3.3	1.19	0.59	0.66	-	-	3.70	-	0.03	0.02	0.00	-	-	-	-	0.01	-
70	CROSSCHECK	-	-	3.5	0.96	0.62	0.22	-	0.0	4.80	2.1	0.04	0.01	0.00	-	-	0.00	-	-	-
70	STRIPED MULLET	15.0	1.3	4.8	0.53	0.47	0.47	-	-	1.41	-	0.03	0.01	0.00	-	-	-	-	0.12	-
70	STRIPED MULLET	15.0	1.2	3.8	0.73	0.49	0.34	-	-	1.30	-	0.02	0.01	0.00	-	-	-	-	0.10	-
71	BLUEGILL	8.0	0.4	6.4	0.33	0.14	0.15	-	-	0.52	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	BLUEGILL	7.6	0.4	6.6	0.62	0.15	0.16	-	-	0.42	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	17.1	3.2	4.9	1.07	0.46	0.59	-	-	1.56	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	CROSSCHECK	-	-	6.1	3.65	0.94	0.20	-	0.0	1.00	1.4	0.00	0.00	0.00	0.00	-	0.00	0.00	-	-
71	LARGEMOUTH BASS	16.6	2.6	4.5	0.74	0.17	0.25	-	-	1.15	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	STRIPED MULLET	16.1	2.0	3.9	0.22	0.18	0.21	-	-	0.68	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	STRIPED MULLET	15.0	1.7	4.9	0.17	0.18	0.16	-	-	0.42	-	0.01	0.01	0.00	-	-	0.00	-	-	-
72	CHANNEL CATFISH	11.8	0.4	3.6	0.13	0.14	0.09	-	-	1.50	-	0.00	0.03	0.00	-	-	0.00	-	-	-
72	FRESHWATER DRUM	9.1	0.2	2.3	0.11	0.10	0.06	-	-	1.00	-	0.00	0.03	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	14.1	1.3	3.0	0.64	0.28	0.19	-	-	4.30	-	0.00	0.04	0.00	-	-	0.00	-	-	-
72	CROSSCHECK	-	-	2.9	1.43	0.34	0.39	-	0.0	1.80	1.7	0.03	0.03	0.00	0.00	-	1.00	0.00	-	-
72	LARGEMOUTH BASS	13.1	1.3	2.9	1.70	0.21	0.28	-	-	8.70	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	STRIPED MULLET	12.3	0.7	4.5	1.20	0.29	0.33	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	BLUEGILL	7.5	0.2	26.6	0.44	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	BLUEGILL	7.1	0.2	3.5	0.73	0.09	0.20	0.0	-	1.30	0.0	0.04	0.07	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	14.7	1.5	5.5	0.36	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	9.30	-	-	-
73	STRIPED MULLET	15.9	1.4	3.5	0.19	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	5.60	-	-	-
74	FRESHWATER DRUM	13.7	1.2	5.7	0.60	0.13	0.00	0.0	-	0.00	0.6	0.00	0.00	0.00	-	-	0.00	-	-	-
74	FRESHWATER DRUM	16.9	2.7	15.5	0.82	0.38	0.43	0.0	-	1.90	0.0	0.00	0.00	0.00	-	-	8.00	-	-	-
74	CROSSCHECK	-	-	17.8	0.90	0.65	0.35	0.0	0.0	0.00	0.0	0.01	0.01	0.03	0.69	0.00	3.10	0.04	0.21	0.00
74	SMALLMOUTH BUFFALO	17.8	3.3	10.5	1.30	0.52	0.00	0.0	-	2.70	0.0	0.00	0.00	0.00	-	-	2.90	-	-	-

STATION 14, TOMBIGBEE RIVER AT MCINTOSH, AL

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
70	CARP	17.0	3.7	6.1	2.13	1.00	0.27	-	-	0.86	-	0.01	0.01	0.00	-	-	-	-	0.12	-
70	LARGEMOUTH BASS	13.0	1.2	1.3	3.26	1.12	0.77	-	-	1.30	-	0.01	0.01	0.00	-	-	-	-	0.08	-
70	CROSSCHECK	-	-	2.5	3.64	1.78	0.38	-	0.0	1.50	0.4	0.03	0.00	0.00	-	-	0.00	-	-	-
70	STRIPED MULLET	15.8	1.6	4.4	2.34	0.97	0.73	-	-	1.25	-	0.02	0.01	0.00	-	-	-	-	0.21	-
70	STRIPED MULLET	15.8	1.6	5.8	1.00	0.59	0.57	-	-	1.07	-	0.02	0.02	0.00	-	-	-	-	0.16	-
71	CARP	19.7	3.9	3.5	0.43	0.26	0.04	-	-	0.17	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	CARP	19.6	3.8	7.0	2.92	1.30	0.09	-	-	0.52	-	0.02	0.01	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	15.7	2.0	4.8	4.18	0.80	0.55	-	-	1.04	-	0.03	0.01	0.00	-	-	0.00	-	-	-
71	CROSSCHECK	-	-	5.4	3.11	0.85	0.72	-	0.0	10.00	0.8	0.18	0.03	0.00	0.00	-	0.50	0.04	-	-
71	LARGEMOUTH BASS	14.7	1.6	6.6	1.21	0.68	0.43	-	-	0.83	-	0.02	0.01	0.00	-	-	0.00	-	-	-
71	STRIPED MULLET	15.8	1.9	7.0	0.94	0.46	0.21	-	-	0.37	-	0.02	0.01	0.00	-	-	0.00	-	-	-
71	STRIPED MULLET	15.6	1.8	6.4	3.26	0.82	0.32	-	-	0.37	-	0.02	0.01	0.00	-	-	0.00	-	-	-
72	CHANNEL CATFISH	13.7	0.7	9.2	2.20	0.70	0.24	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	CHANNEL CATFISH	12.7	0.5	6.9	0.90	0.41	0.17	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	10.6	0.7	7.1	15.00	5.00	1.80	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	CROSSCHECK	-	-	8.4	14.10	4.60	1.43	-	0.0	2.70	3.3	0.09	0.00	0.00	0.00	-	0.50	0.22	-	-
72	STRIPED MULLET	15.6	1.4	3.7	0.26	0.15	0.10	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	21.0	4.6	5.5	32.00	5.00	11.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	12.6	1.0	3.0	2.80	0.53	0.00	0.0	-	0.00	0.0	0.02	0.00	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	3.3	11.56	0.19	0.27	0.0	0.0	1.00	0.5	0.00	0.00	0.00	0.00	-	0.50	4.20	0.02	0.00
73	LARGEMOUTH BASS	12.0	0.7	3.0	6.80	1.60	1.20	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	STRIPED MULLET	15.5	1.6	5.4	1.30	0.46	0.33	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	FRESHWATER DRUM	20.5	5.3	19.8	0.47	0.00	0.00	0.0	-	0.23	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	22.8	0.78	0.23	0.18	0.0	0.0	0.19	0.2	0.01	0.02	0.02	0.06	0.00	2.78	0.03	0.06	0.01
74	SMALLMOUTH BUFFALO	17.7	3.2	11.4	0.49	0.31	0.33	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 60, BRAZOS RIVER AT RICHMOND, TX

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	CHANNEL CATFISH	20.9	3.4	6.9	1.12	0.40	0.27	-	-	1.25	-	0.09	0.00	0.00	-	-	-	-	0.02	-
70	CHANNEL CATFISH	17.1	1.8	8.5	1.45	0.49	0.24	-	-	1.09	-	0.08	0.01	0.00	-	-	-	-	0.02	-
70	LONGNOSE GAR	25.1	1.5	0.9	1.67	0.31	0.23	-	-	1.56	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	SMALLMOUTH BUFFALO	17.2	3.2	6.0	1.03	0.56	0.39	-	-	2.34	-	0.10	0.00	0.00	-	-	-	-	0.03	-
71	LONGNOSE GAR	25.1	1.6	5.2	2.38	0.42	0.37	-	-	0.94	-	0.09	0.01	0.00	-	-	0.01	-	-	-
71	SMALLMOUTH BUFFALO	21.4	7.0	12.2	0.63	0.39	0.25	-	-	0.57	-	0.10	0.01	0.00	-	-	0.01	-	-	-
71	SMALLMOUTH BUFFALO	19.1	4.0	7.9	0.45	0.45	0.30	-	-	1.98	-	0.07	0.01	0.00	-	-	0.01	-	-	-
71	SPOTTED GAR	22.4	2.1	4.8	2.51	0.55	0.31	-	-	1.09	-	0.63	0.01	0.00	-	-	0.01	-	-	-
71	MIXED SPECIES	10.9	0.4	0.7	0.70	0.13	0.13	-	-	0.73	-	0.01	0.01	0.00	-	-	0.01	-	-	-
71	BLUE CATFISH	14.3	1.6	6.0	1.17	0.30	0.32	-	-	0.57	-	0.02	0.01	0.00	-	-	0.01	-	-	-
72	CHANNEL CATFISH	12.4	0.6	2.5	0.42	0.05	0.05	-	-	0.05	-	0.04	0.00	0.00	-	-	0.00	-	-	-
72	LONGNOSE GAR	25.4	0.9	3.9	6.50	0.01	0.46	-	-	0.00	-	0.03	0.00	0.00	-	-	0.00	-	-	-
72	CROSSCHECK	-	-	5.0	5.20	0.32	0.27	-	0.0	2.00	0.8	0.07	0.02	0.00	0.00	-	4.00	0.00	-	-
72	RIVER CARPSUCKER	10.4	0.6	7.7	0.40	0.00	0.01	-	-	0.00	-	0.04	0.00	0.00	-	-	0.00	-	-	-
72	BLUE CATFISH	13.9	1.1	4.9	0.14	0.18	0.18	-	-	0.08	-	0.11	0.00	0.00	-	-	0.00	-	-	-
73	LONGNOSE GAR	23.8	0.9	1.5	2.10	0.06	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LONGNOSE GAR	22.2	0.8	1.5	2.00	0.15	0.00	0.0	-	0.00	0.7	0.00	0.00	0.00	-	-	0.00	-	-	-
73	RIVER CARPSUCKER	10.0	0.4	0.4	0.05	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	BLUE CATFISH	16.1	1.4	9.2	1.70	0.08	0.00	0.0	-	0.00	0.5	0.07	0.00	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	9.7	2.17	0.15	0.08	0.0	0.2	0.20	0.2	0.02	0.02	0.02	0.04	-	5.00	0.00	0.02	0.00

STATION 61, COLORADO RIVER AT WHARTON, TX

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	CHANNEL CATFISH	13.7	1.2	6.7	0.25	0.13	0.09	-	-	0.32	-	0.02	0.00	0.00	-	-	-	-	0.01	-
70	RIVER CARPSUCKER	13.3	1.5	5.7	0.20	0.12	0.11	-	-	0.31	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	RIVER CARPSUCKER	12.6	1.5	5.4	0.18	0.20	0.13	-	-	0.21	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	SPOTTED BASS	8.4	0.5	3.9	0.42	0.15	0.11	-	-	0.65	-	0.02	0.00	0.00	-	-	-	-	0.01	-
71	CHANNEL CATFISH	15.5	1.0	3.6	0.23	0.22	0.12	-	-	0.38	-	0.01	0.00	0.00	-	-	0.01	-	-	-
71	FLATHEAD CATFISH	22.5	4.7	4.2	0.52	0.16	0.23	-	-	0.83	-	0.01	0.00	0.00	-	-	0.01	-	-	-
71	LONGNOSE GAR	26.1	1.7	2.7	0.76	0.42	0.21	-	-	1.12	-	0.01	0.01	0.00	-	-	0.01	-	-	-
71	LONGNOSE GAR	24.2	1.6	5.3	1.22	0.26	0.16	-	-	0.54	-	0.01	0.00	0.00	-	-	0.01	-	-	-
71	RIVER CARPSUCKER	11.8	1.1	1.0	0.21	0.08	0.09	-	-	0.31	-	0.01	0.00	0.00	-	-	0.01	-	-	-
71	RIVER CARPSUCKER	14.3	1.4	4.3	0.40	0.34	0.26	-	-	0.62	-	0.03	0.00	0.00	-	-	0.01	-	-	-
72	CHANNEL CATFISH	16.7	1.5	3.9	0.44	0.08	0.00	-	-	1.10	-	0.08	0.00	0.00	-	-	0.00	-	-	-
72	RIVER CARPSUCKER	13.2	1.0	3.9	0.89	0.00	0.00	-	-	0.00	-	0.03	0.00	0.00	-	-	9.60	-	-	-
72	RIVER CARPSUCKER	13.2	1.2	4.4	0.22	0.01	0.00	-	-	0.00	-	0.23	0.00	0.00	-	-	2.70	-	-	-
72	SPOTTED GAR	20.5	1.3	3.9	0.41	0.69	0.00	-	-	1.30	-	0.15	0.00	0.00	-	-	0.00	-	-	-
73	CARP	20.1	4.1	2.4	0.15	0.03	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	12.1	0.6	2.6	0.25	0.08	0.00	0.0	-	0.00	0.0	0.02	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	13.0	0.7	2.0	0.12	0.06	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	RIVER CARPSUCKER	15.8	1.6	3.3	1.70	1.60	0.50	0.0	-	2.70	0.0	0.03	0.00	0.00	-	-	0.00	-	-	-
73	SPOTTED BASS	12.0	1.0	1.4	0.20	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 113, SAN ANTONIO RIVER AT MCFADDIN, TX

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
74	CARP	18.3	2.7	3.5	0.03	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	16.8	1.3	5.3	0.23	0.05	0.00	0.0	-	0.60	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	5.2	0.18	0.11	0.00	0.0	0.0	0.33	0.3	0.04	0.02	0.02	0.11	0.04	0.00	0.00	0.03	0.01
74	SMALLMOUTH BASS	15.7	2.5	7.4	0.05	0.00	0.00	0.0	-	0.10	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	SMALLMOUTH BASS	17.1	3.5	8.5	0.07	0.00	0.00	0.0	-	0.10	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 62, NUECES RIVER AT MATHIS, TX

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES			PCB'S (AROCLOR MIXTURES)				CYCLODIENE INSECTICIDES					OTHER COMPOUNDS			
					DDE	DDD	DDT	1242	1248	1254	1260	DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	TOXAPHENE	HCB	A-BHC	G-BHC
70	CHANNEL CATFISH	12.9	0.7	3.3	0.28	0.01	0.01	-	-	0.03	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	GIZZARD SHAD	11.4	0.5	3.1	0.17	0.02	0.01	-	-	0.05	-	0.01	0.00	0.00	-	-	-	-	0.03	-
70	GIZZARD SHAD	10.0	0.4	3.0	0.21	0.02	0.02	-	-	0.05	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	LARGEMOUTH BASS	10.9	0.9	1.9	0.29	0.01	0.02	-	-	0.05	-	0.01	0.00	0.00	-	-	-	-	0.01	-
71	BLACK CRAPPIE	7.0	0.3	2.3	0.06	0.02	0.02	-	-	0.06	-	0.01	0.00	0.00	-	-	0.01	-	-	-
71	GIZZARD SHAD	9.7	0.4	1.3	0.09	0.01	0.02	-	-	0.06	-	0.01	0.00	0.00	-	-	0.01	-	-	-
71	GIZZARD SHAD	7.3	0.2	1.0	0.04	0.01	0.01	-	-	0.05	-	0.01	0.00	0.00	-	-	0.01	-	-	-
71	WHITE CRAPPIE	8.7	0.3	1.4	0.14	0.02	0.03	-	-	0.06	-	0.01	0.01	0.00	-	-	0.01	-	-	-
71	BLUE CATFISH	12.8	0.6	2.5	0.15	0.03	0.03	-	-	0.08	-	0.01	0.00	0.00	-	-	0.01	-	-	-
71	BLUE CATFISH	11.3	0.4	4.3	0.10	0.02	0.02	-	-	0.06	-	0.01	0.01	0.00	-	-	0.01	-	-	-
72	CHANNEL CATFISH	10.4	0.3	3.6	0.54	0.03	0.02	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	GIZZARD SHAD	12.1	0.7	5.0	0.21	0.00	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	GIZZARD SHAD	11.6	0.6	4.8	0.11	0.00	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	BLUE CATFISH	12.8	0.8	4.2	0.18	0.00	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	GIZZARD SHAD	10.5	0.4	1.9	0.11	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	13.1	1.3	3.7	0.26	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	SMALLMOUTH BUFFALO	15.7	2.4	10.3	0.21	0.03	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	SMALLMOUTH BUFFALO	14.1	2.0	10.8	0.19	0.01	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	WHITE CRAPPIE	9.4	0.5	2.7	0.09	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	BLUE CATFISH	-	3.4	0.2	0.01	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	16.6	1.5	4.0	0.27	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	13.7	0.8	2.1	0.18	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	SMALLMOUTH BUFFALO	17.6	3.9	19.0	0.35	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 16, RIO GRANDE AT MISSION, TX

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES			PCB'S (AROCLOR MIXTURES)				CYCLODIENE INSECTICIDES					OTHER COMPOUNDS			
					DDE	DDD	DDT	1242	1248	1254	1260	DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	TOXAPHENE	HCB	A-BHC	G-BHC
70	CHANNEL CATFISH	16.8	1.5	8.6	7.27	0.26	0.27	-	-	0.40	-	0.01	0.01	0.00	-	-	-	-	0.11	-
70	CROSSCHECK	-	-	7.4	7.75	0.41	0.35	-	0.3	0.30	0.0	0.05	0.07	0.16	-	-	0.00	-	-	-
70	GIZZARD SHAD	10.7	0.4	3.0	4.17	0.26	0.29	-	-	0.36	-	0.02	0.02	0.00	-	-	-	-	0.02	-
70	GIZZARD SHAD	12.1	0.7	5.5	3.50	0.28	0.34	-	-	0.36	-	0.02	0.04	0.00	-	-	-	-	0.02	-
70	BLUE CATFISH	16.2	1.3	1.1	3.98	0.09	0.08	-	-	0.17	-	0.02	0.02	0.00	-	-	-	-	0.01	-
71	CHANNEL CATFISH	13.4	1.1	8.3	4.17	0.16	0.15	-	-	0.15	-	0.04	0.01	0.00	-	-	0.01	-	-	-
71	CHANNEL CATFISH	11.9	0.6	7.2	2.51	0.13	0.10	-	-	0.13	-	0.04	0.01	0.00	-	-	0.01	-	-	-
71	GIZZARD SHAD	9.6	0.3	1.8	1.50	0.10	0.15	-	-	0.13	-	0.01	0.00	0.00	-	-	0.01	-	-	-
71	GIZZARD SHAD	10.6	0.4	6.0	8.27	0.25	0.34	-	-	0.33	-	0.06	0.01	0.00	-	-	0.01	-	-	-
71	CROSSCHECK	-	-	4.1	10.50	0.45	0.05	-	0.0	0.60	0.0	0.11	0.05	0.00	0.00	-	2.90	0.01	-	-
71	BLUE CATFISH	13.5	1.4	13.7	3.75	0.24	0.14	-	-	0.15	-	0.08	0.02	0.00	-	-	0.01	-	-	-
71	BLUE CATFISH	13.0	1.1	9.7	6.18	0.29	0.25	-	-	0.21	-	0.10	0.04	0.00	-	-	0.01	-	-	-
72	CHANNEL CATFISH	15.2	1.1	6.3	7.20	0.16	0.34	-	-	0.00	-	0.00	0.01	0.00	-	-	0.00	-	-	-
72	GIZZARD SHAD	8.0	0.2	1.4	1.50	0.04	0.10	-	-	0.00	-	0.00	0.04	0.00	-	-	0.00	-	-	-
72	CROSSCHECK	-	-	1.6	0.94	0.06	0.09	-	0.0	0.10	0.0	0.01	0.02	0.00	0.00	-	0.50	0.00	-	-
72	GIZZARD SHAD	6.9	0.1	2.3	0.75	0.04	0.07	-	-	0.00	-	0.00	0.01	0.00	-	-	0.00	-	-	-
72	BLUE CATFISH	14.3	1.2	5.0	4.40	0.17	0.12	-	-	0.00	-	0.05	0.06	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	13.4	0.7	3.5	2.70	0.12	0.12	0.0	-	0.00	0.0	0.03	0.00	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	3.9	2.53	0.08	0.03	0.0	0.0	0.40	0.2	0.01	0.02	0.00	0.03	-	0.50	0.00	0.00	0.00
73	CHANNEL CATFISH	12.1	0.4	2.5	3.10	0.11	0.25	0.0	-	0.00	0.0	0.02	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	12.0	0.5	3.1	1.90	0.00	0.00	0.0	-	9.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	GIZZARD SHAD	10.0	0.3	0.1	0.49	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	9.5	0.3	2.7	0.21	0.22	0.00	0.0	-	0.60	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	GIZZARD SHAD	10.3	0.4	3.5	12.00	0.58	0.94	0.0	-	0.00	0.0	0.08	0.00	0.00	-	-	0.00	-	-	-
74	BLUE CATFISH	9.9	0.3	3.2	0.73	0.03	0.03	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	BLUE CATFISH	9.5	0.2	3.0	1.30	0.05	0.04	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 65, PECOS RIVER AT RED BLUFF LAKE, TX

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	CHANNEL CATFISH	15.8	1.4	8.2	0.08	0.14	0.09	-	-	1.07	-	0.03	0.01	0.00	-	-	-	-	0.01	-
70	GIZZARD SHAD	12.3	0.8	7.2	0.29	0.11	0.03	-	-	0.07	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	GIZZARD SHAD	12.4	0.8	6.4	0.29	0.11	0.02	-	-	0.07	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	LARGEMOUTH BASS	10.6	0.7	1.6	0.13	0.03	0.02	-	-	0.06	-	0.01	0.01	0.00	-	-	-	-	0.01	-
71	CHANNEL CATFISH	15.8	1.3	1.4	0.35	0.06	0.03	-	-	0.20	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	17.3	1.8	2.8	0.49	0.08	0.03	-	-	0.18	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	GIZZARD SHAD	7.4	0.2	2.4	0.06	0.03	0.02	-	-	0.07	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	GIZZARD SHAD	9.2	0.3	9.1	0.14	0.06	0.03	-	-	0.14	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	SMALLMOUTH BUFFALO	14.7	1.2	4.5	0.32	0.09	0.03	-	-	0.14	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	SMALLMOUTH BUFFALO	14.8	1.5	0.5	0.26	0.04	0.02	-	-	0.12	-	0.01	0.01	0.00	-	-	0.00	-	-	-
72	CHANNEL CATFISH	14.4	0.9	2.4	0.87	0.08	0.00	-	-	0.60	-	0.02	0.00	0.00	-	-	0.00	-	-	-
72	GIZZARD SHAD	10.4	0.4	0.7	0.04	0.00	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	SMALLMOUTH BUFFALO	13.6	1.1	0.8	0.49	0.05	0.05	-	-	0.00	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	SMALLMOUTH BUFFALO	13.7	1.1	0.9	0.26	0.01	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	13.5	0.8	0.9	0.24	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	GIZZARD SHAD	8.2	0.1	2.2	0.14	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	GIZZARD SHAD	9.3	0.3	2.5	0.24	0.00	0.30	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	SMALLMOUTH BUFFALO	14.4	1.4	5.9	0.23	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	11.8	0.5	1.8	0.18	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	GIZZARD SHAD	9.7	0.4	6.2	0.92	0.09	0.00	0.0	-	0.80	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	GIZZARD SHAD	10.0	0.4	4.2	0.32	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	WHITE BASS	14.7	1.4	5.5	0.47	0.06	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 63, RIO GRANDE AT ELEPHANT BUTTE, NM

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	BLUEGILL	4.6	0.1	0.8	0.10	0.04	0.05	-	-	0.38	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	BLUEGILL	4.7	0.1	2.4	0.05	0.04	0.04	-	-	0.30	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	CHANNEL CATFISH	23.9	5.9	12.5	0.11	0.10	0.05	-	-	0.35	-	0.01	0.00	0.00	-	-	-	-	0.02	-
70	LARGEMOUTH BASS	18.6	4.5	8.1	0.23	0.14	0.09	-	-	0.65	-	0.01	0.00	0.00	-	-	-	-	0.02	-
71	CHANNEL CATFISH	13.2	1.3	4.1	0.14	0.08	0.06	-	-	0.52	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	16.9	2.8	5.2	0.17	0.11	0.05	-	-	0.40	-	0.02	0.01	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	16.6	2.7	4.0	0.14	0.08	0.05	-	-	0.49	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	WHITE BASS	15.8	2.0	9.2	0.17	0.10	0.06	-	-	0.49	-	0.03	0.01	0.00	-	-	0.00	-	-	-
71	WHITE BASS	16.2	2.0	9.3	0.17	0.12	0.07	-	-	0.47	-	0.03	0.01	0.00	-	-	0.00	-	-	-
71	LONGEAR SUNFISH	4.9	0.1	3.9	0.12	0.06	0.04	-	-	0.38	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	CARP	12.3	1.0	3.3	0.11	0.04	0.00	-	-	0.92	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	CHANNEL CATFISH	10.2	0.6	5.4	0.17	0.14	0.03	-	-	1.29	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	CHANNEL CATFISH	8.9	0.3	4.4	0.09	0.07	0.00	-	-	1.79	-	0.00	0.00	0.01	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	15.0	2.0	3.7	0.09	0.04	0.01	-	-	1.47	-	0.01	0.00	0.00	-	-	0.00	-	-	-
73	CARP	14.3	1.2	3.8	0.11	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	11.9	0.4	2.8	0.08	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	12.8	0.6	3.1	0.08	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	12.5	1.3	5.8	0.05	0.00	0.30	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	BLUEGILL	6.1	0.2	2.4	0.04	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CARP	12.5	0.9	5.3	0.10	0.00	0.00	0.0	-	0.83	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CARP	10.8	0.6	3.9	0.08	0.00	0.00	0.0	-	0.34	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	10.4	0.4	3.8	0.09	0.00	0.00	0.0	-	0.57	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 64, RIO GRANDE AT ALAMOSA, CO

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	BROWN TROUT	10.8	0.5	1.9	0.18	0.19	0.11	-	-	0.92	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	CARP	17.2	2.4	1.8	0.23	0.13	0.04	-	-	0.26	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	WHITE SUCKER	12.7	0.9	3.5	0.13	0.20	0.21	-	-	1.36	-	0.01	0.00	0.00	-	-	-	-	0.02	-
70	WHITE SUCKER	13.4	1.0	5.3	0.52	0.74	0.59	-	-	5.31	-	0.01	0.00	0.00	-	-	-	-	0.03	-
71	BROWN TROUT	13.6	0.9	3.9	0.08	0.06	0.04	-	-	0.15	-	0.01	0.00	0.00	-	-	0.01	-	-	-
71	BROWN TROUT	12.7	0.6	1.4	0.09	0.06	0.04	-	-	0.31	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	CARP	10.1	0.5	1.9	0.11	0.05	0.03	-	-	0.07	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	CARP	10.4	0.5	2.6	0.11	0.05	0.03	-	-	0.05	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	WHITE SUCKER	8.0	0.2	1.6	0.05	0.04	0.02	-	-	0.12	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	WHITE SUCKER	10.7	0.5	1.1	0.06	0.04	0.03	-	-	0.12	-	0.02	0.01	0.00	-	-	0.01	-	-	-
72	BROWN TROUT	13.3	0.9	4.1	0.13	0.00	0.00	-	-	0.00	-	0.10	0.00	0.00	-	-	0.00	-	-	-
72	CARP	15.4	2.1	1.7	0.24	0.07	0.00	-	-	0.00	-	0.28	0.00	0.00	-	-	0.00	-	-	-
72	WHITE SUCKER	11.3	0.6	2.6	0.12	0.06	0.04	-	-	0.00	-	0.52	0.00	0.00	-	-	0.00	-	-	-
72	WHITE SUCKER	15.1	1.3	1.8	0.23	0.07	0.14	-	-	0.00	-	0.47	0.00	0.00	-	-	0.00	-	-	-
73	BROWN TROUT	13.0	1.0	2.8	0.19	0.00	0.00	0.0	-	2.70	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	WHITE SUCKER	12.9	0.9	2.5	0.07	0.00	0.00	0.0	-	0.73	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	WHITE SUCKER	12.3	0.7	1.0	0.15	0.00	0.00	0.0	-	0.50	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 52, LAKE CHAMPLAIN AT BURLINGTON, VT

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	CHAIN PICKEREL	16.2	1.1	2.9	0.65	0.21	0.29	-	-	1.22	-	0.01	0.00	0.00	-	-	-	-	0.02	-
70	PUMPKINSEED	6.5	0.3	3.5	0.09	0.08	0.10	-	-	0.32	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	YELLOW PERCH	8.6	0.3	3.2	0.20	0.14	0.16	-	-	0.57	-	0.01	0.00	0.00	-	-	-	-	0.04	-
70	YELLOW PERCH	9.4	0.5	4.4	0.35	0.20	0.28	-	-	0.99	-	0.01	0.00	0.00	-	-	-	-	0.02	-
71	CHAIN PICKEREL	16.2	1.0	2.7	0.48	0.25	0.58	-	-	1.35	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	CHAIN PICKEREL	13.8	0.7	1.3	0.14	0.07	0.09	-	-	0.36	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	PUMPKINSEED	7.3	0.4	3.7	0.02	0.08	0.07	-	-	0.29	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	PUMPKINSEED	6.9	0.3	2.9	0.09	0.09	0.06	-	-	0.45	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	YELLOW PERCH	8.9	0.3	2.5	0.24	0.18	0.24	-	-	1.08	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	YELLOW PERCH	10.0	0.4	3.2	0.14	0.08	0.07	-	-	0.40	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	CHAIN PICKEREL	17.1	1.1	1.6	0.24	0.16	0.21	-	-	0.66	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	PUMPKINSEED	7.8	0.5	3.4	0.15	0.06	0.02	-	-	0.60	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	YELLOW PERCH	11.0	0.7	3.6	1.00	0.15	0.24	-	-	1.20	-	0.03	0.00	0.00	-	-	0.00	-	-	-
73	CHAIN PICKEREL	11.9	1.5	2.5	0.42	0.00	0.11	0.0	-	1.50	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	PUMPKINSEED	7.6	0.4	2.6	0.09	0.01	0.00	0.0	-	0.28	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	YELLOW PERCH	9.5	0.4	2.1	0.48	0.12	0.21	0.0	-	1.80	0.0	0.01	0.01	0.00	-	-	0.00	-	-	-
73	YELLOW PERCH	8.7	0.3	1.5	0.19	0.06	0.08	0.0	-	0.62	0.0	0.01	0.00	0.00	-	-	0.00	-	-	-
74	CHAIN PICKEREL	16.3	1.0	2.7	0.18	0.00	0.00	0.0	-	0.94	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	PUMPKINSEED	6.9	0.3	3.7	0.08	0.04	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	YELLOW PERCH	10.1	0.4	3.3	0.33	0.08	0.07	0.0	-	1.20	0.0	0.02	0.00	0.00	-	-	0.00	-	-	-
74	YELLOW PERCH	9.6	0.4	3.3	0.45	0.00	0.00	0.0	-	1.30	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 66, ST. LAWRENCE RIVER AT MASSENA, NY

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	NORTHERN PIKE	20.6	2.1	2.4	0.14	0.30	0.36	-	-	5.94	-	0.02	0.00	0.00	-	-	-	-	0.09	-
70	WHITE SUCKER	17.2	1.5	2.8	0.22	0.17	0.13	-	-	1.22	-	0.01	0.00	0.00	-	-	-	-	0.04	-
70	YELLOW PERCH	7.0	0.2	2.6	0.24	0.18	0.16	-	-	1.45	-	0.01	0.00	0.00	-	-	-	-	0.03	-
70	YELLOW PERCH	8.3	0.3	2.6	0.23	0.16	0.14	-	-	1.45	-	0.01	0.00	0.00	-	-	-	-	0.02	-
71	SMALLMOUTH BASS	12.2	0.9	1.9	0.56	0.47	0.35	-	-	3.39	-	0.02	0.01	0.00	-	-	0.00	-	-	-
71	SMALLMOUTH BASS	12.1	0.9	5.2	0.95	0.70	0.59	-	-	6.09	-	0.02	0.00	0.00	-	-	0.00	-	-	-
71	WHITE SUCKER	13.9	1.1	2.5	0.10	0.11	0.06	-	-	1.43	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	WHITE SUCKER	14.1	1.2	3.4	0.10	0.11	0.06	-	-	1.85	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	YELLOW PERCH	9.2	0.3	2.4	0.48	0.57	0.24	-	-	2.60	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	YELLOW PERCH	8.4	0.2	2.3	0.13	0.12	0.08	-	-	1.64	-	0.01	0.01	0.00	-	-	0.00	-	-	-
72	NORTHERN PIKE	24.7	3.5	2.4	0.00	0.18	0.11	-	-	19.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	CROSSCHECK	-	-	3.2	1.40	0.14	0.24	-	0.0	3.80	2.1	0.03	0.00	0.00	0.00	-	0.00	0.01	-	-
72	NORTHERN PIKE	19.6	1.8	1.9	0.11	0.05	0.00	-	-	2.60	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	WHITE SUCKER	13.6	1.2	2.9	0.16	0.03	0.00	-	-	1.00	-	0.02	0.00	0.00	-	-	0.00	-	-	-
72	YELLOW PERCH	8.8	0.3	1.9	0.44	0.05	0.02	-	-	3.70	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	YELLOW PERCH	8.7	0.3	1.7	0.63	0.02	0.00	-	-	2.60	-	0.02	0.00	0.00	-	-	0.00	-	-	-
73	NORTHERN PIKE	21.4	2.3	1.2	0.28	0.00	0.00	0.0	-	2.60	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	WHITE SUCKER	14.8	1.4	1.3	0.10	0.00	0.00	0.0	-	0.48	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	YELLOW PERCH	7.0	0.2	1.9	0.12	0.00	0.00	0.0	-	1.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	YELLOW PERCH	7.2	0.2	1.2	0.20	0.00	0.00	0.0	-	1.20	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	NORTHERN PIKE	20.7	2.1	1.9	0.59	0.09	0.08	0.0	-	3.60	0.0	0.03	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	1.6	0.47	0.12	0.00	0.0	0.0	3.62	1.3	0.02	0.01	0.01	0.04	0.00	0.00	0.00	0.01	0.01
74	WHITE SUCKER	12.3	0.8	2.3	0.08	0.03	0.00	0.0	-	0.70	0.0	0.01	0.00	0.00	-	-	0.00	-	-	-
74	YELLOW PERCH	7.4	0.2	1.7	0.13	0.03	0.01	0.0	-	1.00	0.0	0.02	0.00	0.00	-	-	0.00	-	-	-
74	YELLOW PERCH	8.4	0.3	2.0	0.18	0.03	0.01	0.0	-	1.10	0.0	0.02	0.00	0.00	-	-	0.00	-	-	-

STATION 110, LAKE ONTARIO AT ROOSEVELT BEACH, NY

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
74	BROWN BULLHEAD	11.4	0.7	6.1	0.37	0.00	0.00	0.0	-	3.20	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	ROCK BASS	8.4	0.5	2.3	0.00	0.03	0.03	0.0	-	1.70	0.0	0.02	0.00	0.00	-	-	0.00	-	-	-
74	YELLOW PERCH	9.1	0.4	4.3	0.00	0.00	0.00	0.0	-	0.90	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	YELLOW PERCH	8.5	0.3	3.6	0.10	0.04	0.03	0.0	-	1.30	0.0	0.02	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	3.4	0.12	0.04	0.02	0.0	0.0	1.05	0.3	0.01	0.01	0.01	0.02	0.00	0.00	0.00	0.01	0.00

STATION 18, LAKE ONTARIO AT FORT ONTARIO, NY

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	CARP	14.8	1.6	5.8	1.22	0.29	0.11	-	-	1.01	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	ROCK BASS	6.5	0.2	1.1	0.27	0.37	0.31	-	-	2.60	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	WHITE PERCH	8.3	0.4	10.4	0.62	0.76	0.58	-	-	4.69	-	0.07	0.00	0.00	-	-	-	-	0.25	-
70	CROSSCHECK	-	-	11.2	0.28	0.48	0.61	-	0.0	4.60	1.2	0.10	0.00	0.00	-	-	0.00	-	-	-
70	YELLOW PERCH	8.5	0.4	6.1	0.24	0.32	0.26	-	-	2.24	-	0.03	0.00	0.00	-	-	-	-	0.08	-
70	YELLOW PERCH	8.4	0.4	7.8	0.41	0.54	0.37	-	-	2.71	-	0.06	0.00	0.00	-	-	-	-	0.20	-
71	ROCK BASS	8.3	0.5	4.5	0.50	0.47	0.31	-	-	4.17	-	0.02	0.01	0.27	-	-	0.00	-	-	-
71	ROCK BASS	8.4	0.6	5.1	0.64	0.52	0.33	-	-	4.43	-	0.02	0.01	0.31	-	-	0.00	-	-	-
71	WHITE PERCH	10.0	0.6	11.3	1.43	1.13	0.73	-	-	8.33	-	0.06	0.01	0.88	-	-	0.00	-	-	-
71	WHITE PERCH	9.6	0.6	3.9	1.90	1.48	1.03	-	-	11.20	-	0.06	0.01	1.00	-	-	0.00	-	-	-
71	CROSSCHECK	-	-	9.8	2.96	0.72	1.54	-	17.0	6.08	5.2	0.10	0.02	0.00	0.00	-	0.00	0.34	-	-
71	YELLOW PERCH	11.4	0.8	9.0	1.17	1.03	0.70	-	-	8.20	-	0.10	0.01	0.78	-	-	0.00	-	-	-
71	YELLOW PERCH	11.3	0.8	7.8	0.89	0.78	0.55	-	-	6.51	-	0.08	0.01	0.68	-	-	0.00	-	-	-
72	ROCK BASS	7.7	0.4	3.9	0.36	0.17	0.83	-	-	5.90	-	0.06	0.00	0.00	-	-	0.00	-	-	-
72	WHITE PERCH	8.2	0.4	11.8	0.93	0.14	0.17	-	-	5.60	-	0.07	0.00	0.00	-	-	0.00	-	-	-
72	CROSSCHECK	-	-	13.2	1.01	0.15	0.34	-	4.8	3.70	1.3	0.09	0.00	0.00	0.00	-	0.00	0.09	-	-
72	YELLOW PERCH	9.1	0.4	6.0	0.55	0.10	0.12	-	-	3.70	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	YELLOW PERCH	9.2	0.4	5.8	0.68	0.15	0.22	-	-	8.70	-	0.06	0.00	0.00	-	-	0.00	-	-	-
73	ROCK BASS	8.3	0.5	4.3	0.29	0.02	0.00	0.0	-	2.60	0.0	0.03	0.00	0.00	-	-	0.00	-	-	-
73	WHITE PERCH	9.0	0.5	10.2	0.13	0.06	0.00	0.0	-	3.50	0.0	0.06	0.00	0.00	-	-	0.00	-	-	-
73	YELLOW PERCH	9.9	0.5	4.2	0.28	0.02	0.00	0.0	-	7.60	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	YELLOW PERCH	9.6	0.5	3.7	0.37	0.05	0.04	0.0	-	2.80	0.0	0.03	0.00	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	4.4	0.14	0.04	0.03	0.0	1.5	1.50	0.5	0.30	0.01	0.00	0.00	-	0.00	0.02	0.00	0.00
74	ROCK BASS	8.7	0.5	3.8	1.00	0.17	0.10	0.0	-	7.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	WHITE PERCH	9.3	0.5	13.7	2.50	0.42	0.71	0.0	-	14.10	0.0	0.21	0.00	0.00	-	-	0.00	-	-	-
74	YELLOW PERCH	11.1	0.7	5.5	0.87	0.22	0.18	0.0	-	6.30	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-.	4.5	0.30	0.13	0.03	0.0	0.0	1.54	0.0	0.05	0.01	0.01	0.05	0.00	0.00	0.01	0.01	0.01
74	YELLOW PERCH	10.9	0.6	7.3	1.90	0.34	0.33	0.0	-	8.00	0.0	0.13	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	6.6	0.47	0.29	0.06	0.0	0.0	3.40	0.0	0.07	0.02	0.01	0.09	0.00	0.00	0.04	0.01	0.01

STATION 17, GENESEE RIVER AT SCOTSVILLE, NY

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	NORTHERN PIKE	13.7	0.7	1.1	0.07	0.11	0.07	-	-	0.85	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	REDHORSE	13.2	0.9	3.3	0.13	0.23	0.13	-	-	1.80	-	0.03	0.00	0.00	-	-	-	-	0.05	-
70	ROCK BASS	8.1	0.5	3.2	0.09	0.22	0.11	-	-	1.54	-	0.11	0.00	0.00	-	-	-	-	0.05	-
70	WHITE SUCKER	14.0	1.2	2.4	0.21	0.27	0.21	-	-	1.56	-	0.03	0.00	0.00	-	-	-	-	0.09	-
71	ROCK BASS	8.0	0.4	1.4	0.05	0.05	0.05	-	-	0.60	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	ROCK BASS	7.5	0.4	2.1	0.12	0.11	0.09	-	-	0.50	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	WALLEYE	19.3	3.0	7.7	0.49	0.43	0.29	-	-	3.28	-	0.03	0.00	0.00	-	-	0.00	-	-	-
71	WALLEYE	13.4	0.9	6.8	0.16	0.14	0.10	-	-	1.04	-	0.03	0.00	0.00	-	-	0.00	-	-	-
71	WHITE SUCKER	14.4	1.1	2.3	0.15	0.26	0.20	-	-	1.51	-	0.02	0.00	0.00	-	-	0.00	-	-	-
71	WHITE SUCKER	14.1	1.0	1.5	0.08	0.12	0.12	-	-	0.99	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	NORTHERN PIKE	20.7	2.1	2.2	0.12	0.04	0.00	-	-	1.80	-	0.02	0.00	0.00	-	-	0.00	-	-	-
72	REDHORSE	15.4	1.5	3.8	0.09	0.05	0.02	-	-	1.40	-	0.04	0.00	0.00	-	-	0.00	-	-	-
72	ROCK BASS	7.4	0.4	2.2	0.04	0.01	0.00	-	-	0.00	-	0.01	0.00	0.00	-	-	0.00	-	-	-
73	ROCK BASS	7.6	0.4	2.0	0.01	0.02	0.00	0.0	-	0.28	0.0	0.01	0.00	0.00	-	-	0.00	-	-	-
73	WALLEYE	16.1	1.4	6.9	0.29	0.09	0.00	0.0	-	3.00	0.0	0.02	0.00	0.00	-	-	0.00	-	-	-
73	WALLEYE	17.0	1.6	5.9	0.27	0.39	0.00	0.0	-	2.10	0.0	0.07	0.00	0.00	-	-	0.00	-	-	-
73	WHITE SUCKER	15.4	1.5	2.8	0.00	0.07	0.01	0.0	-	2.20	0.0	0.02	0.00	0.00	-	-	0.00	-	-	-
74	BLACK CRAPPIE	7.8	0.3	2.9	0.18	0.00	0.00	0.0	-	1.20	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	BLACK CRAPPIE	8.1	0.4	3.1	0.15	0.00	0.00	0.0	-	0.57	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	NORTHERN PIKE	20.5	2.0	2.5	0.17	0.14	0.11	0.0	-	0.98	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	REDHORSE	14.2	1.2	2.9	0.07	0.04	0.00	0.0	-	0.42	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 19, LAKE ERIE AT ERIE, PA

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
70	FRESHWATER DRUM	14.1	1.3	7.3	0.18	0.23	0.29	-	-	2.60	-	0.06	0.00	0.00	-	-	-	-	0.01	-
70	WHITE SUCKER	18.0	2.7	5.9	0.16	0.25	0.19	-	-	2.08	-	0.03	0.00	0.00	-	-	-	-	0.01	-
70	YELLOW PERCH	9.7	0.4	4.6	0.20	0.26	0.32	-	-	2.45	-	0.06	0.00	0.00	-	-	-	-	0.02	-
70	YELLOW PERCH	8.9	0.3	5.3	0.23	0.26	0.33	-	-	2.34	-	0.07	0.00	0.00	-	-	-	-	0.01	-
71	FRESHWATER DRUM	13.3	1.1	4.6	0.13	0.16	0.15	-	-	1.54	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	FRESHWATER DRUM	13.3	1.3	8.6	0.09	0.10	0.10	-	-	0.73	-	0.03	0.01	0.00	-	-	0.00	-	-	-
71	WHITE SUCKER	14.6	1.3	5.2	0.08	0.13	0.12	-	-	1.19	-	0.02	0.01	0.00	-	-	0.00	-	-	-
71	WHITE SUCKER	14.4	1.4	4.5	0.09	0.15	0.14	-	-	1.42	-	0.16	0.01	0.00	-	-	0.00	-	-	-
71	YELLOW PERCH	9.5	0.5	4.2	0.06	0.12	0.11	-	-	1.00	-	0.02	0.01	0.00	-	-	0.00	-	-	-
71	YELLOW PERCH	9.0	0.4	3.5	0.10	0.13	0.14	-	-	1.22	-	0.02	0.01	0.00	-	-	0.00	-	-	-
72	FRESHWATER DRUM	13.5	1.1	9.3	0.17	0.13	0.05	-	-	2.60	-	0.11	0.00	0.00	-	-	0.00	-	-	-
72	WHITE SUCKER	12.6	1.2	2.7	0.07	0.02	0.01	-	-	2.20	-	0.04	0.00	0.00	-	-	0.00	-	-	-
72	YELLOW PERCH	8.6	0.3	3.9	0.07	0.05	0.00	-	-	1.50	-	0.07	0.00	0.00	-	-	0.00	-	-	-
72	YELLOW PERCH	9.0	0.4	4.5	0.09	0.06	0.01	-	-	1.80	-	0.04	0.00	0.00	-	-	0.00	-	-	-
73	YELLOW PERCH	8.7	0.4	3.0	0.10	0.00	0.00	0.0	-	0.80	0.0	0.04	0.00	0.00	-	-	0.00	-	-	-
73	YELLOW PERCH	9.2	0.4	2.4	0.03	0.04	0.00	0.0	-	0.70	0.0	0.02	0.00	0.00	-	-	0.00	-	-	-
74	FRESHWATER DRUM	11.6	0.8	12.1	0.10	0.00	0.00	0.0	-	1.80	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	WHITE SUCKER	13.1	0.9	5.8	0.02	0.00	0.00	0.0	-	0.35	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	YELLOW PERCH	8.8	0.3	4.2	0.05	0.00	0.00	0.0	-	0.90	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	YELLOW PERCH	8.6	0.3	4.9	0.07	0.00	0.00	0.0	-	1.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 108, LAKE ERIE AT PORT CLINTON, OH

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
74	CARP	73.9	2.2	10.3	0.06	0.15	0.00	0.0	-	1.30	0.0	0.03	0.00	0.00	-	-	0.00	-	-	-
74	WALLEYE	17.3	2.5	16.4	0.43	0.49	0.06	0.0	-	5.70	0.0	0.14	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	17.7	0.48	0.48	0.06	0.0	0.0	4.19	1.7	0.07	0.01	0.02	0.18	0.04	0.00	0.02	0.06	0.01
74	WHITE BASS	10.9	1.0	9.8	2.50	0.47	0.34	0.0	-	12.00	0.0	0.13	0.00	0.00	-	-	0.00	-	-	-

STATION 107, LAKE ST. CLAIR AT MT. CLEMENS, MI

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
74	CARP	17.7	3.0	11.3	0.45	0.28	0.00	0.0	-	1.90	0.0	0.04	0.00	0.00	-	-	0.00	-	-	-
74	CARP	17.1	3.1	11.9	0.84	0.56	0.00	0.0	-	6.30	0.0	0.03	0.00	0.00	-	-	0.00	-	-	-
74	WALLEYE	18.6	2.4	10.7	6.40	0.57	0.72	0.0	-	12.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	9.3	0.54	1.22	0.26	0.0	1.1	3.83	1.6	0.09	0.01	0.06	0.36	0.06	0.00	0.03	0.04	0.00
74	WHITE BASS	13.8	1.5	9.6	0.64	0.18	0.16	0.0		3.10	0.0	0.07	0.00	0.00	-	-	0.00	-	-	-

STATION 20, LAKE HURON (SAGINAW BAY) AT BAY PORT, MI

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	CARP	19.6	4.0	15.8	0.58	0.51	0.14	-	-	2.76	-	0.02	0.01	0.00	-	-	-	-	0.31	-
70	CROSSCHECK	-	-	13.5	0.18	0.38	0.02	-	2.5	0.60	0.0	0.04	0.01	0.00	-	-	0.00	-	-	-
70	CHANNEL CATFISH	16.2	1.4	15.5	0.90	0.71	0.42	-	-	3.80	-	0.03	0.01	0.00	-	-	-	-	0.09	-
70	YELLOW PERCH	9.1	0.3	3.4	0.54	0.48	0.35	-	-	3.07	-	0.01	0.01	0.00	-	-	-	-	0.02	-
70	YELLOW PERCH	9.1	0.3	3.1	0.58	0.56	0.37	-	-	3.59	-	0.01	0.01	0.00	-	-	-	-	0.02	-
71	CARP	16.7	2.4	9.0	0.37	0.21	0.07	-	-	6.67	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	CARP	17.7	2.7	10.4	0.35	0.21	0.08	-	-	4.32	-	0.02	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	17.0	1.6	17.4	0.70	0.24	0.22	-	-	1.35	-	0.04	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	17.3	1.7	17.6	0.85	0.49	0.26	-	-	1.72	-	0.05	0.01	0.00	-	-	0.00	-	-	-
71	YELLOW PERCH	9.4	0.4	3.5	0.25	0.16	0.09	-	-	2.86	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	YELLOW PERCH	9.1	0.3	2.5	0.21	0.15	0.07	-	-	2.81	-	0.01	0.01	0.00	-	-	0.00	-	-	-
72	YELLOW PERCH	8.6	0.3	-	0.35	0.00	0.00	-	-	0.54	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	YELLOW PERCH	8.5	0.3	-	0.26	0.00	0.00	-	-	0.44	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	15.2	1.8	7.0	0.16	0.00	0.00	3.3	-	0.00	1.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	8.7	0.17	0.00	0.00	0.0	2.0	1.00	0.5	0.02	0.00	0.00	0.00	-	0.00	0.01	0.00	0.00
73	CHANNEL CATFISH	15.6	1.3	29.5	0.23	0.33	0.00	4.8	-	0.00	1.8	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	13.7	2.88	0.08	0.08	0.0	4.2	3.80	1.8	0.06	0.00	0.00	0.00	-	0.00	0.04	0.00	0.00
73	YELLOW PERCH	9.5	0.4	3.1	0.17	0.00	0.00	2.8	-	0.00	1.4	0.00	0.00	0.00	-	-	0.00	-	-	-
73	YELLOW PERCH	9.1	0.4	5.5	0.21	0.00	0.00	2.3	-	0.00	2.1	0.03	0.00	0.00	-	-	0.00	-	-	-
74	CARP	18.1	3.0	12.0	0.36	0.08	0.00	0.0	-	2.40	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	14.0	0.24	0.11	0.01	0.0	3.1	2.00	0.0	0.03	0.01	0.01	0.04	0.00	0.00	0.01	0.02	0.01
74	CHANNEL CATFISH	17.1	2.0	13.4	0.28	0.34	0.04	0.0	-	4.70	0.0	0.08	0.00	0.00	-	-	0.00	-	-	-
74	YELLOW PERCH	9.5	0.4	4.3	0.30	0.08	0.13	0.0	-	2.20	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	YELLOW PERCH	9.6	0.4	5.4	0.90	0.14	0.19	0.0	-	3.90	0.0	0.06	0.00	0.00	-	-	0.00	-	-	-

STATION 106, LAKE HURON AT ALPENA, MI

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
74	LAKE WHITEFISH	17.3	1.8	10.0	0.22	0.00	0.00	0.0	-	0.51	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	WHITE SUCKER	17.7	2.2	5.3	0.07	0.05	0.03	0.0	-	0.46	0.0	0.03	0.00	0.00	-	-	0.00	-	-	-
74	YELLOW PERCH	11.2	0.7	5.5	0.36	0.14	0.00	0.0	-	0.65	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	5.9	0.15	0.07	0.00	0.0	0.0	0.76	0.3	0.01	0.00	0.01	0.03	0.01	0.00	0.00	0.02	0.01
74	YELLOW PERCH	10.5	0.6	5.4	0.19	0.06	0.10	0.0	-	0.73	0.0	0.04	0.00	0.00	-	-	0.00	-	-	-

STATION 21, LAKE MICHIGAN AT SHEBOYGAN, WI

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	BLOATER	11.2	0.6	29.3	2.47	0.40	1.83	-	-	3.91	-	0.30	0.03	0.00	-	-	-	-	0.03	-
70	BLOATER	11.0	0.6	30.1	2.80	0.46	2.16	-	-	4.82	-	0.23	0.04	0.00	-	-	-	-	0.02	-
70	CROSSCHECK	-	-	24.6	2.09	0.14	2.15	-	1.9	3.20	1.5	0.30	0.03	0.00	-	-	0.00	-	-	-
70	YELLOW PERCH	9.4	0.4	10.7	0.98	1.03	0.96	-	-	7.42	-	0.08	0.02	0.00	-	-	-	-	0.07	-
71	BLOATER	9.5	0.5	24.5	3.06	0.40	2.18	-	-	2.81	-	0.11	0.02	0.00	-	-	0.00	-	-	-
71	BLOATER	9.3	0.4	21.2	2.06	0.32	1.07	-	-	2.08	-	0.12	0.04	0.00	-	-	0.00	-	-	-
71	LAKE TROUT	26.0	6.4	19.7	7.39	0.78	3.16	-	-	7.03	-	0.21	0.04	0.00	-	-	0.00	-	-	-
71	LAKE TROUT	25.1	6.6	21.0	7.81	1.02	4.30	-	-	8.59	-	0.25	0.04	0.00	-	-	0.00	-	-	-
71	CROSSCHECK	-	-	18.5	15.80	2.40	3.00	-	12.0	30.00	11.0	0.59	0.02	0.14	0.00	-	0.00	0.03	-	-
71	YELLOW PERCH	9.8	0.3	7.2	1.37	0.65	0.95	-	-	12.20	-	0.09	0.02	0.00	-	-	0.00	-	-	-
71	YELLOW PERCH	9.6	0.3	6.7	1.60	0.82	0.95	-	-	10.70	-	0.08	0.02	0.00	-	-	0.00	-	-	-
72	BLOATER	10.7	0.5	20.7	1.10	0.08	0.45	-	-	0.00	-	0.35	0.00	0.00	-	-	3.00	-	-	-
72	BLOATER	10.9	0.6	22.8	2.50	0.17	2.00	-	-	0.00	-	0.22	0.00	0.00	-	-	0.00	-	-	-
72	CROSSCHECK	-	-	17.0	1.40	0.29	0.50	-	0.0	1.70	0.9	0.21	0.00	0.00	0.00	-	0.00	0.00	-	-
72	LAKE TROUT	18.3	2.5	10.2	2.90	0.28	0.56	-	-	0.00	-	0.21	0.00	0.00	-	-	0.00	-	-	-
72	CROSSCHECK	-	-	5.4	1.90	0.21	0.80	-	1.0	3.20	0.7	0.12	0.00	0.04	0.18	-	0.00	0.01	-	-
72	LAKE TROUT	19.2	2.5	12.3	2.50	0.18	0.17	-	-	0.00	-	0.16	0.00	0.00	-	-	4.00	-	-	-
72	YELLOW PERCH	11.0	0.9	6.1	1.80	0.24	1.00	-	-	8.90	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	YELLOW PERCH	10.7	0.8	7.4	1.10	0.20	0.61	-	-	9.80	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	BLOATER	10.8	0.4	20.6	0.49	0.00	0.00	5.7	-	8.00	0.0	0.27	0.00	0.00	-	-	0.00	-	-	-
73	BLOATER	11.0	0.4	21.5	0.64	0.00	0.00	5.6	-	5.30	0.0	0.22	0.00	0.00	-	-	0.00	-	-	-
73	LAKE TROUT	21.4	3.2	14.8	1.90	0.00	0.00	0.0	-	7.90	0.0	0.11	0.00	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	16.1	7.85	0.13	0.13	0.0	1.3	1.80	1.3	0.01	0.00	0.00	0.00	-	0.00	0.01	0.02	0.00
73	LAKE TROUT	21.7	3.3	15.3	2.80	0.00	0.00	6.4	-	0.00	5.3	0.12	0.00	0.00	-	-	0.00	-	-	-
73	YELLOW PERCH	9.2	0.3	6.8	0.59	0.00	0.00	0.0	-	8.10	0.0	0.07	0.00	0.00	-	-	0.00	-	-	-
73	YELLOW PERCH	8.8	0.3	6.6	0.61	0.06	0.00	0.0	-	7.60	0.0	0.07	0.00	0.00	-	-	0.00	-	-	-
74	BLOATER	9.7	0.4	20.1	0.83	0.50	2.00	0.0	-	3.20	0.0	0.73	0.00	0.00	-	-	0.00	-	-	-
74	BLOATER	10.1	0.4	20.2	1.20	0.33	0.72	0.0	-	11.00	0.0	0.77	0.00	0.00	-	-	0.00	-	-	-
74	LAKE TROUT	23.2	3.8	16.6	0.79	0.14	0.00	0.0	-	0.00	0.6	0.11	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	18.0	1.73	0.44	0.13	0.0	0.0	5.14	1.3	0.04	0.00	0.07	0.18	0.00	0.00	0.02	0.02	0.01
74	WHITE SUCKER	15.2	1.6	6.2	2.60	0.44	0.00	0.0	-	0.00	1.7	0.13	0.00	0.00	-	-	0.00	-	-	-
74	WHITE SUCKER	15.8	1.8	7.5	0.30	0.09	0.19	0.0	-	2.00	0.0	0.08	0.00	0.00	-	-	0.00	-	-	-

STATION 105, LAKE MICHIGAN AT SAUGATUCK, MI

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
74	BLOATER	10.5	0.4	16.4	2.10	0.25	0.00	0.0	-	4.20	0.0	0.35	0.00	0.00	-	-	0.00	-	-	-
74	LAKE TROUT	20.2	2.7	15.3	2.40	0.98	1.60	0.0	-	13.00	0.0	0.71	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	16.9	0.57	0.99	0.25	0.0	0.0	2.79	2.1	0.02	0.00	0.09	0.42	0.10	0.00	0.01	0.02	0.00
74	YELLOW PERCH	10.4	0.5	7.4	0.91	0.33	0.50	0.0	-	7.70	0.0	0.20	0.00	0.00	-	-	0.00	-	-	-
74	YELLOW PERCH	10.9	0.6	8.2	0.85	0.45	0.55	0.0	-	6.70	0.0	0.23	0.00	0.00	-	-	0.00	-	-	-

STATION 102, LAKE SUPERIOR AT KEEWEENAW POINT, MI

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
74	BLOATER	9.4	2.1	16.6	0.28	0.00	0.06	0.0	-	0.79	0.0	0.03	0.00	0.00	-	-	0.00	-	-	-
74	BLOATER	9.9	2.2	15.3	0.23	0.02	0.21	0.0	-	0.61	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	SKIPJACK HERRING	11.6	0.7	9.8	0.43	0.09	1.60	0.0	-	1.10	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	LAKE TROUT	24.2	5.6	24.4	3.80	0.24	1.10	0.0	-	4.50	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	32.0	0.66	0.41	1.08	0.0	0.0	3.65	4.9	0.00	0.00	0.10	0.20	0.00	3.33	0.00	0.09	0.00

STATION 22, LAKE SUPERIOR AT BAYFIELD, WI

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
70	BLOATER	10.3	0.3	10.7	0.36	0.11	0.36	-	-	0.89	-	0.02	0.00	0.00	-	-	-	-	0.02	-
70	LAKE TROUT	23.4	4.0	13.6	0.30	0.12	0.38	-	-	1.29	-	0.04	0.01	0.00	-	-	-	-	0.03	-
70	LAKE WHITEFISH	17.6	1.7	11.0	0.25	0.10	0.24	-	-	0.55	-	0.04	0.01	0.00	-	-	-	-	0.04	-
70	LAKE WHITEFISH	18.1	1.9	12.3	0.24	0.10	0.26	-	-	0.60	-	0.07	0.01	0.00	-	-	-	-	0.05	-
71	BLOATER	8.5	0.5	12.7	0.76	0.06	0.44	-	-	0.68	-	0.02	0.01	0.00	-	-	0.00	-	-	-
71	BLOATER	8.4	0.4	10.8	0.63	0.12	0.63	-	-	0.83	-	0.02	0.01	0.00	-	-	0.00	-	-	-
71	LAKE TROUT	19.0	3.2	11.1	0.69	0.08	0.37	-	-	1.10	-	0.03	0.01	0.00	-	-	0.00	-	-	-
71	LAKE TROUT	22.0	4.4	13.2	1.22	0.11	0.66	-	-	1.72	-	0.03	0.01	0.00	-	-	0.00	-	-	-
71	LAKE WHITEFISH	19.7	2.4	12.4	0.27	0.07	0.28	-	-	0.38	-	0.05	0.03	0.00	-	-	0.00	-	-	-
71	LAKE WHITEFISH	20.0	2.8	13.7	0.22	0.14	0.20	-	-	0.24	-	0.05	0.03	0.00	-	-	0.00	-	-	-
72	BLOATER	10.1	0.3	3.6	0.70	0.03	0.48	-	-	0.00	-	0.03	0.00	0.00	-	-	0.00	-	-	-
72	BLOATER	10.0	0.3	8.5	0.99	0.04	0.71	-	-	0.00	-	0.04	0.00	0.00	-	-	0.00	-	-	-
72	LAKE TROUT	22.9	3.7	14.2	0.52	0.06	0.18	-	-	1.30	-	0.06	0.00	0.00	-	-	0.00	-	-	-
72	LAKE TROUT	20.9	3.2	16.5	1.20	0.07	0.15	-	-	3.00	-	0.08	0.00	0.00	-	-	0.00	-	-	-
72	CROSSCHECK	-	-	16.5	1.01	0.04	0.31	-	0.0	1.90	0.7	0.05	0.01	0.00	0.00	-	0.00	0.00	-	-
72	LAKE WHITEFISH	21.2	3.2	11.3	0.15	0.02	0.06	-	-	0.00	-	0.05	0.00	0.00	-	-	0.00	-	-	-
73	BLOATER	10.3	0.3	13.0	0.30	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	20.8	1.44	0.07	0.06	0.0	4.0	6.00	1.3	0.45	0.00	0.04	0.00	-	0.00	0.03	0.02	0.01
73	BLOATER	10.6	0.3	9.4	0.34	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LAKE TROUT	26.1	5.9	14.0	0.51	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LAKE TROUT	27.0	6.5	14.5	1.80	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LAKE WHITEFISH	21.2	3.3	15.1	0.33	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	BLOATER	10.8	0.3	14.1	1.00	0.20	0.62	0.0	-	2.70	0.0	0.09	0.00	0.00	-	-	0.00	-	-	-
74	BLOATER	10.5	0.4	11.4	0.41	0.07	0.25	0.0	-	1.20	0.0	0.05	0.06	0.00	-	-	0.00	-	-	-
74	LAKE TROUT	25.6	5.2	11.4	0.80	0.44	1.30	0.0	-	2.70	0.0	0.25	0.00	0.00	-	-	0.00	-	-	-
74	LAKE WHITEFISH	18.5	2.1	12.3	0.40	0.06	0.36	0.0	-	0.70	0.0	0.24	0.07	0.00	-	-	0.00	-	-	-

STATION 15, MISSISSIPPI RIVER AT LULING, LA

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	CARP	15.3	2.1	15.5	0.08	0.16	0.15	-	-	1.04	-	0.02	0.01	0.00	-	-	-	-	0.42	-
70	CARP	15.3	2.4	19.5	0.10	0.16	0.11	-	-	0.69	-	0.01	0.01	0.00	-	-	-	-	0.45	-
70	CROSSCHECK	-	-	23.0	0.09	0.36	0.06	-	0.0	1.50	1.2	0.20	0.05	0.00	-	-	0.00	-	-	-
70	CHANNEL CATFISH	13.8	1.0	21.1	0.10	0.15	0.14	-	-	0.58	-	0.01	0.01	0.00	-	-	-	-	0.30	-
70	FRESHWATER DRUM	12.0	0.7	4.3	0.14	0.17	0.24	-	-	1.89	-	0.03	0.00	0.00	-	-	-	-	0.31	-
71	BIGMOUTH BUFFALO	18.6	4.8	20.7	0.26	0.55	0.37	-	-	1.82	-	0.29	0.21	0.00	-	-	0.00	-	-	-
71	BIGMOUTH BUFFALO	19.2	4.9	20.3	0.30	0.56	0.43	-	-	1.20	-	0.28	0.19	0.00	-	-	0.00	-	-	-
71	CROSSCHECK	-	-	18.9	0.15	0.74	0.42	-	6.0	1.40	3.2	0.47	0.30	0.28	0.94	-	4.00	1.00	-	-
71	CARP	14.2	2.1	13.9	0.06	0.16	0.05	-	-	0.31	-	0.05	0.07	0.00	-	-	0.00	-	-	-
71	CARP	14.4	1.9	12.6	0.07	0.18	0.05	-	-	0.26	-	0.07	0.06	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	14.2	1.3	23.7	0.16	0.39	0.32	-	-	2.66	-	0.06	0.17	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	15.7	1.8	21.0	0.19	0.41	0.32	-	-	1.25	-	0.17	0.17	0.00	-	-	0.00	-	-	-
72	CARP	23.0	6.1	9.8	0.21	0.00	0.00	-	-	4.50	-	0.03	0.00	0.00	-	-	0.00	-	-	-
72	CROSSCHECK	-	-	13.4	0.48	0.33	0.11	-	2.0	3.40	1.6	0.16	0.00	0.04	0.19	-	1.00	0.42	-	-
72	CHANNEL CATFISH	13.8	1.1	24.1	0.00	0.06	0.00	-	-	6.60	-	0.26	0.20	0.00	-	-	0.00	-	-	-
72	FRESHWATER DRUM	14.2	1.4	9.5	0.13	0.21	0.31	-	-	5.40	-	0.14	0.18	0.00	-	-	0.00	-	-	-
72	FRESHWATER DRUM	9.8	0.7	6.1	0.35	0.36	0.44	-	-	1.90	-	0.20	0.15	0.00	-	-	0.00	-	-	-
73	FRESHWATER DRUM	13.4	1.3	10.1	0.72	0.00	0.00	0.0	-	0.43	0.0	0.13	0.00	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	10.7	0.85	0.04	0.10	0.0	0.0	2.00	1.0	0.31	0.17	0.00	0.03	-	2.50	0.00	0.00	0.00
73	BLUE CATFISH	14.5	1.1	19.6	0.13	0.32	0.26	0.0	-	0.00	0.0	0.25	0.21	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	19.6	0.19	0.11	0.15	0.0	0.0	0.50	0.5	0.34	0.22	0.03	0.04	-	2.00	0.52	0.14	0.00
73	BLUE CATFISH	14.5	1.1	21.7	0.18	0.03	0.00	0.0	-	0.00	0.0	0.11	0.05	0.00	-	-	12.90	-	-	-
74	CARP	19.8	4.5	13.0	0.11	0.00	0.00	0.0	-	0.80	0.0	0.00	0.00	0.00	-	-	2.50	-	-	-
74	CROSSCHECK	-	-	16.7	0.17	0.32	0.06	0.0	0.0	0.33	0.0	0.18	0.19	0.05	0.16	0.14	0.00	0.03	0.05	0.00
74	SMALLMOUTH BUFFALO	13.6	1.9	17.3	0.00	0.00	0.00	0.0	-	1.40	0.0	0.00	0.00	0.00	-	-	4.10	-	-	-
74	SMALLMOUTH BUFFALO	15.4	2.4	10.7	0.04	0.00	0.00	0.0	-	0.30	0.0	0.00	0.00	0.00	-	-	2.30	-	-	-
74	BLUE CATFISH	13.8	1.0	24.9	0.02	0.00	0.00	0.0	-	0.13	0.0	0.00	0.00	0.00	-	-	4.60	-	-	-

STATION 81, RED RIVER AT ALEXANDRIA, LA

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	FRESHWATER DRUM	13.7	1.1	11.5	0.87	0.51	0.57	-	-	1.77	-	0.15	0.04	0.00	-	-	-	-	0.12	-
70	SMALLMOUTH BUFFALO	21.0	5.8	15.1	1.91	1.02	0.86	-	-	1.17	-	0.02	0.00	0.00	-	-	-	-	0.02	-
70	SMALLMOUTH BUFFALO	20.0	5.2	12.8	4.31	1.59	1.30	-	-	1.43	-	0.01	0.00	0.00	-	-	-	-	0.03	-
70	CROSSCHECK	-	-	9.8	4.33	1.38	1.15	-	0.0	0.10	0.0	0.05	0.00	0.00	-	-	19.00	-	-	-
70	WHITE CATFISH	13.0	0.6	7.4	0.83	0.65	0.68	-	-	1.25	-	0.04	0.01	0.00	-	-	-	-	0.12	-
71	FRESHWATER DRUM	13.5	1.2	7.8	0.54	0.38	0.45	-	-	0.94	-	0.07	0.06	0.00	-	-	0.01	-	-	-
71	FRESHWATER DRUM	14.2	1.3	9.3	0.55	0.25	0.34	-	-	1.46	-	0.09	0.07	0.00	-	-	0.01	-	-	-
71	SMALLMOUTH BUFFALO	16.1	2.3	7.1	0.38	0.38	0.29	-	-	0.94	-	0.05	0.04	0.00	-	-	0.01	-	-	-
71	SMALLMOUTH BUFFALO	15.5	1.9	7.1	1.08	0.73	1.20	-	-	0.83	-	0.02	0.01	0.00	-	-	0.01	-	-	-
71	WHITE CATFISH	14.9	1.2	8.7	0.67	0.42	0.44	-	-	1.46	-	0.50	0.01	0.00	-	-	0.01	-	-	-
71	CROSSCHECK	-	-	8.8	1.10	0.44	0.58	-	1.0	2.30	0.8	0.08	0.03	0.08	0.16	-	4.00	0.14	-	-
71	WHITE CATFISH	14.7	1.2	6.5	0.55	0.31	0.37	-	-	0.42	-	0.10	0.01	0.00	-	-	0.01	-	-	-
72	CHANNEL CATFISH	13.7	0.9	16.0	0.43	0.08	0.00	-	-	0.00	-	0.04	0.00	0.00	-	-	7.60	-	-	-
72	CROSSCHECK	-	-	19.0	0.70	0.50	0.48	-	0.0	0.40	0.0	0.08	0.01	0.00	0.04	-	5.00	0.00	-	-
72	FRESHWATER DRUM	13.8	1.3	13.8	0.52	0.26	0.00	-	-	0.00	-	0.17	0.06	0.00	-	-	7.60	-	-	-
72	FRESHWATER DRUM	13.7	1.2	11.2	0.40	0.56	0.38	-	-	0.00	-	0.20	0.09	0.00	-	-	4.40	-	-	-
72	SMALLMOUTH BUFFALO	18.2	3.6	14.6	1.31	0.00	0.90	-	-	0.00	-	0.00	0.00	0.00	-	-	13.00	-	-	-
73	CARP	21.7	3.8	8.6	1.00	0.27	0.00	0.0	-	0.80	0.0	0.11	0.00	0.00	-	-	0.00	-	-	-
73	FRESHWATER DRUM	13.1	1.0	7.9	0.48	0.27	0.21	0.0	-	2.00	0.0	0.18	0.05	0.00	-	-	0.70	-	-	-
73	FRESHWATER DRUM	13.0	1.0	6.7	0.45	0.37	0.11	0.0	-	0.00	0.0	0.04	0.02	0.00	-	-	3.00	-	-	-
73	SMALLMOUTH BUFFALO	17.0	3.9	7.7	1.30	0.25	0.30	0.0	-	0.00	0.0	0.03	0.06	0.00	-	-	0.83	-	-	-
73	BLUE CATFISH	12.3	0.5	8.5	0.36	0.17	0.07	0.0	-	0.00	0.0	0.03	0.00	0.00	-	-	2.50	-	-	-
73	CROSSCHECK	-	-	9.6	1.44	0.38	0.17	0.0	0.0	0.50	0.3	0.03	0.01	0.00	0.00	-	1.00	0.04	0.04	0.00
74	CARP	21.1	4.8	8.7	0.54	0.30	0.00	0.0	-	0.50	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	13.4	0.7	6.4	0.42	0.10	0.00	0.0	-	0.40	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	6.0	0.46	0.16	0.01	0.0	0.0	0.18	0.0	0.02	0.05	0.02	0.05	0.04	0.80	0.06	0.04	0.01
74	FRESHWATER DRUM	11.6	0.7	6.8	0.33	0.04	0.00	0.0	-	0.30	0.0	0.03	0.00	0.00	-	-	0.00	-	-	-
74	FRESHWATER DRUM	12.6	0.9	7.1	0.76	0.20	0.24	0.0	-	0.50	0.0	0.19	0.00	0.00	-	-	3.30	-	-	-

STATION 82, RED RIVER AT LAKE TEXOMA, OK/TX

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	BLUEGILL	6.6	0.4	3.0	0.16	0.04	0.06	-	-	0.29	-	0.02	0.00	0.00	-	-	-	-	0.01	-
70	CARP	20.5	4.5	9.3	0.39	0.12	0.03	-	-	0.30	-	0.01	0.00	0.00	-	-	-	-	0.02	-
70	CARP	20.2	4.3	13.3	0.47	0.22	0.05	-	-	0.21	-	0.02	0.00	0.00	-	-	-	-	0.03	-
70	LARGEMOUTH BASS	13.2	0.9	2.8	0.23	0.06	0.08	-	-	0.21	-	0.02	0.00	0.00	-	-	-	-	0.01	-
71	BLUEGILL	7.1	0.3	4.0	0.10	0.03	0.03	-	-	0.09	-	0.01	0.01	0.00	-	-	0.01	-	-	-
71	BLUEGILL	6.8	0.3	2.8	0.09	0.02	0.03	-	-	0.13	-	0.01	0.01	0.00	-	-	0.01	-	-	-
71	CARP	20.6	3.9	8.5	0.69	0.21	0.05	-	-	0.35	-	0.03	0.01	0.00	-	-	0.01	-	-	-
71	CARP	19.5	3.4	4.9	0.44	0.09	0.03	-	-	0.18	-	0.02	0.01	0.00	-	-	0.01	-	-	-
71	LARGEMOUTH BASS	12.5	0.8	2.8	0.22	0.07	0.06	-	-	0.16	-	0.02	0.01	0.00	-	-	0.01	-	-	-
71	LARGEMOUTH BASS	14.5	1.4	1.5	0.18	0.04	0.05	-	-	0.10	-	0.01	0.01	0.00	-	-	0.01	-	-	-
72	BLUEGILL	7.4	0.3	0.4	0.05	0.00	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	CARP	15.1	1.3	3.6	0.04	0.01	0.00	-	-	0.00	-	0.02	0.00	0.00	-	-	0.00	-	-	-
72	CARP	15.9	1.7	3.5	0.04	0.01	0.00	-	-	0.00	-	0.03	0.00	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	16.2	2.2	3.3	0.59	0.06	0.71	-	-	0.01	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	BLUEGILL	5.3	0.1	1.1	0.10	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	BLUEGILL	5.3	0.1	0.7	0.05	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	19.2	3.2	7.6	0.35	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	11.2	0.7	0.8	0.06	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 80, YAZOO RIVER AT REDWOOD, MS

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	CARP	20.0	4.5	9.5	5.68	5.86	1.48	-	-	1.95	-	0.09	0.07	0.00	-	-	-	-	0.07	-
70	CROSSCHECK	-	-	8.7	9.75	7.70	1.00	-	0.0	1.00	0.0	0.16	0.10	0.00	-	-	34.00	-	-	-
70	GIZZARD SHAD	5.8	0.1	4.2	0.18	0.24	0.33	-	-	0.63	-	0.12	0.06	0.00	-	-	-	-	0.16	-
70	SMALLMOUTH BUFFALO	16.5	3.0	10.3	2.16	3.05	3.22	-	-	2.47	-	0.15	0.11	0.00	-	-	-	-	0.20	-
70	CROSSCHECK	-	-	8.4	1.31	1.75	1.48	-	0.0	1.40	0.0	0.12	0.06	0.00	-	-	31.00	-	-	-
70	SMALLMOUTH BUFFALO	15.5	2.3	14.7	0.39	1.47	0.70	-	-	1.69	-	0.15	0.08	0.00	-	-	-	-	0.30	-
71	CARP	18.8	4.0	4.2	6.45	2.38	1.46	-	-	0.98	-	0.13	0.12	0.00	-	-	0.01	-	-	-
71	CARP	21.4	5.5	10.9	1.51	3.11	0.68	-	-	0.39	-	0.07	0.11	0.00	-	-	0.01	-	-	-
71	CHANNEL CATFISH	20.1	2.3	16.8	2.38	4.04	2.54	-	-	1.63	-	0.11	0.17	0.00	-	-	0.01	-	-	-
71	SMALLMOUTH BUFFALO	16.0	2.5	7.0	1.64	1.69	3.10	-	-	0.65	-	0.07	0.12	0.00	-	-	0.01	-	-	-
71	SMALLMOUTH BUFFALO	16.1	2.5	6.6	3.48	3.52	5.34	-	-	1.63	-	0.09	0.18	0.00	-	-	0.01	-	-	-
71	CROSSCHECK	-	-	6.7	10.20	4.40	10.60	-	0.0	0.50	1.0	0.15	0.34	0.00	0.01	-	48.00	0.03	-	-
72	CARP	22.1	5.1	3.9	0.00	6.50	0.76	-	-	0.00	-	0.00	0.00	0.00	-	-	28.00	-	-	-
72	CROSSCHECK	-	-	4.9	9.60	5.50	1.00	-	0.0	0.00	0.0	0.14	0.13	0.00	0.00	-	24.00	0.00	-	-
72	FRESHWATER DRUM	16.8	2.6	12.0	0.41	0.23	1.10	-	-	0.00	-	0.22	0.12	0.23	-	-	5.80	-	-	-
72	SMALLMOUTH BUFFALO	19.5	4.7	11.6	7.66	4.54	6.47	-	-	0.00	-	0.00	0.00	0.00	-	-	32.00	-	-	-
72	CROSSCHECK	-	-	12.2	8.01	6.45	8.00	-	1.6	2.70	0.8	0.21	0.20	0.00	0.00	-	40.00	0.01	-	-
72	SMALLMOUTH BUFFALO	16.7	2.9	11.8	3.62	4.26	6.11	-	-	0.00	-	0.00	0.00	0.00	-	-	38.00	-	-	-
73	CARP	22.7	6.1	10.4	3.10	4.60	0.00	0.0	-	0.00	0.0	0.57	0.00	0.00	-	-	2.70	-	-	-
73	CHANNEL CATFISH	18.7	1.9	18.0	9.60	14.00	7.50	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	31.00	-	-	-
73	CROSSCHECK	-	-	15.5	17.00	14.90	5.92	1.0	0.0	1.50	0.5	1.20	1.40	0.00	0.00	-	30.00	0.02	0.03	0.00
73	SMALLMOUTH BUFFALO	17.3	2.6	12.1	2.90	2.20	3.40	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	16.30	-	-	-
73	SMALLMOUTH BUFFALO	17.8	2.9	14.8	1.90	2.30	3.50	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	17.80	-	-	-
73	CROSSCHECK	-	-	16.2	9.92	0.80	0.41	0.0	0.0	0.80	0.3	0.17	0.19	0.00	0.00	-	20.00	1.90	0.00	0.00
74	CARP	21.1	4.7	5.8	3.50	0.00	0.00	0.0	-	0.00	0.3	0.00	0.00	0.00	-	-	38.00	-	-	-
74	CROSSCHECK	-	-	5.7	2.98	1.14	0.33	0.0	0.0	0.00	0.0	0.07	0.15	0.10	0.13	0.00	4.20	0.02	0.02	0.00
74	CHANNEL CATFISH	16.0	1.1	8.8	7.20	9.00	0.00	0.0	-	1.90	0.0	0.00	0.09	0.00	-	-	51.00	-	-	-
74	CROSSCHECK	-	-	10.0	6.49	8.60	2.60	0.0	0.0	0.53	0.0	0.22	0.87	0.73	0.00	0.00	25.00	0.01	0.00	0.00

STATION 30, WHITE RIVER AT DEVALLS BLUFF, AR

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	CARP	18.0	2.9	6.4	1.46	0.47	0.16	-	-	1.77	-	0.02	0.01	0.00	-	-	-	-	0.02	-
70	CHANNEL CATFISH	15.5	1.4	7.7	0.98	0.78	0.55	-	-	1.82	-	0.07	0.03	0.00	-	-	-	-	0.06	-
70	SMALLMOUTH BUFFALO	17.0	2.6	10.8	1.29	0.58	0.63	-	-	3.65	-	0.13	0.08	0.00	-	-	-	-	0.13	-
70	SMALLMOUTH BUFFALO	21.0	4.8	5.7	2.71	1.32	0.82	-	-	1.17	-	0.03	0.03	0.00	-	-	-	-	0.02	-
70	CROSSCHECK	-	-	6.2	1.22	1.75	0.82	-	0.0	0.60	0.0	0.02	0.01	0.00	-	-	0.00	-	-	-
71	BIGMOUTH BUFFALO	18.6	3.9	11.6	0.69	0.43	0.52	-	-	1.25	-	0.06	0.57	0.00	-	-	0.00	-	-	-
71	BIGMOUTH BUFFALO	16.6	2.4	17.7	0.14	0.24	0.09	-	-	0.10	-	0.02	0.03	0.00	-	-	0.00	-	-	-
71	CARP	19.1	3.5	6.5	0.75	0.26	0.08	-	-	0.94	-	0.07	0.23	0.00	-	-	0.00	-	-	-
71	CARP	22.4	6.5	6.7	1.19	0.45	0.17	-	-	0.52	-	0.04	0.05	0.00	-	-	0.01	-	-	-
71	CHANNEL CATFISH	22.9	5.0	10.5	1.08	0.91	0.76	-	-	3.44	-	0.10	0.20	0.00	-	-	0.01	-	-	-
71	CROSSCHECK	-	-	10.0	0.95	0.57	0.83	-	3.6	3.50	1.7	0.10	0.16	0.03	0.32	-	4.40	0.03	-	-
71	CHANNEL CATFISH	19.6	3.1	14.0	0.70	0.69	0.69	-	-	1.20	-	0.10	0.14	0.00	-	-	0.01	-	-	-
72	BIGMOUTH BUFFALO	19.5	4.7	6.6	0.54	0.17	0.36	-	-	0.00	-	0.01	0.00	0.00	-	-	2.60	-	-	-
72	CROSSCHECK	-	-	11.0	0.59	0.28	0.46	-	0.0	0.00	0.0	0.02	0.08	0.00	0.00	-	1.00	0.00	-	-
72	CARP	18.5	3.4	7.9	0.78	0.41	0.11	-	-	1.50	-	0.07	0.01	0.00	-	-	0.00	-	-	-
72	SMALLMOUTH BUFFALO	18.1	2.8	10.6	0.67	0.20	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	2.20	-	-	-
72	SMALLMOUTH BUFFALO	16.6	2.3	8.8	0.36	0.14	0.25	-	-	0.00	-	0.04	0.00	0.00	-	-	0.00	-	-	-
73	CARP	20.2	4.0	6.9	0.58	0.20	0.06	0.0	-	0.00	0.0	0.10	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	15.2	1.2	10.4	0.59	0.17	0.50	0.0	-	0.00	0.0	0.06	0.00	0.00	-	-	4.40	-	-	-
73	CHANNEL CATFISH	15.3	1.2	9.1	0.84	0.28	0.45	0.0	-	0.00	0.0	0.04	0.03	0.00	-	-	7.20	-	-	-
73	SMALLMOUTH BUFFALO	15.8	2.8	14.8	0.36	0.26	0.47	0.0	-	0.00	0.0	0.07	0.00	0.00	-	-	3.50	-	-	-
74	CHANNEL CATFISH	14.8	1.0	7.6	0.29	0.32	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	1.30	-	-	-
74	CROSSCHECK	-	-	6.9	0.25	0.20	0.01	0.0	0.0	0.51	0.0	0.03	0.02	0.02	0.01	0.01	0.63	0.00	0.01	0.01
74	SMALLMOUTH BUFFALO	12.5	1.2	7.0	0.31	0.25	0.00	0.0	-	0.00	0.0	0.11	0.00	0.00	-	-	0.00	-	-	-
74	SMALLMOUTH BUFFALO	14.4	1.7	7.8	0.24	0.32	0.00	0.0	-	1.80	0.0	0.26	0.00	0.00	-	-	1.80	-	-	-

STATION 28, ARKANSAS RIVER AT PINE BLUFF, AR

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	CARP	25.0	8.9	13.9	0.91	0.90	0.22	-	-	1.25	-	0.05	0.03	0.00	-	-	-	-	0.02	-
70	FLATHEAD CATFISH	23.5	5.5	7.7	1.26	1.19	0.61	-	-	2.08	-	0.07	0.07	0.00	-	-	-	-	0.07	-
70	SMALLMOUTH BUFFALO	16.5	2.9	12.1	0.83	0.88	0.96	-	-	2.23	-	0.03	0.03	0.00	-	-	-	-	0.05	-
70	SMALLMOUTH BUFFALO	19.5	4.8	22.4	0.73	1.11	1.26	-	-	6.04	-	0.25	0.16	0.00	-	-	-	-	0.00	-
70	CROSSCHECK	-	-	17.5	0.95	2.18	3.62	-	0.0	7.50	6.1	0.76	0.20	1.36	-	-	0.00	-	-	-
71	CARP	16.9	2.1	2.7	0.22	0.09	0.06	-	-	0.47	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	CARP	17.7	2.4	2.9	0.11	0.08	0.07	-	-	0.58	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	FLATHEAD CATFISH	19.4	2.8	9.3	0.63	0.68	0.56	-	-	2.92	-	0.11	0.23	0.00	-	-	0.00	-	-	-
71	FLATHEAD CATFISH	21.6	4.8	9.8	0.80	0.80	0.89	-	-	3.91	-	0.15	0.15	0.00	-	-	0.00	-	-	-
71	CROSSCHECK	-	-	9.4	0.84	0.50	0.86	-	0.8	0.80	2.0	0.25	0.22	0.02	0.31	-	4.00	0.00	-	-
71	SMALLMOUTH BUFFALO	17.4	3.3	13.1	0.34	0.48	0.23	-	-	0.31	-	0.02	0.04	0.00	-	-	0.00	-	-	-
71	SMALLMOUTH BUFFALO	18.3	3.5	13.3	0.37	0.48	0.46	-	-	0.76	-	0.04	0.05	0.00	-	-	0.00	-	-	-
72	CARP	20.8	5.6	11.9	3.30	1.30	0.60	-	-	0.00	-	0.00	0.00	0.00	-	-	8.30	-	-	-
72	CHANNEL CATFISH	18.9	2.7	13.2	1.30	1.90	1.10	-	-	0.00	-	0.00	0.00	0.00	-	-	5.60	-	-	-
72	CROSSCHECK	-	-	-	1.62	0.87	1.00	-	0.0	3.70	0.8	0.07	0.20	0.00	0.10	-	5.00	0.01	-	-
72	CHANNEL CATFISH	10.5	0.2	3.4	0.62	0.13	1.00	-	-	0.00	-	0.00	0.00	0.00	-	-	1.80	-	-	-
72	SMALLMOUTH BUFFALO	19.4	5.1	17.2	0.68	0.22	0.47	-	-	0.00	-	0.00	0.00	0.00	-	-	9.50	-	-	-
72	CROSSCHECK	-	-	17.5	0.58	0.40	0.46	-	0.0	1.30	0.8	0.05	0.21	0.00	0.12	-	2.00	0.00	-	-
73	CARP	22.9	6.2	7.1	1.70	1.20	0.00	0.0	-	0.00	0.0	0.01	0.01	0.00	-	-	4.60	-	-	-
73	FLATHEAD CATFISH	22.9	5.6	11.6	1.30	0.83	1.10	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	12.20	-	-	-
73	CROSSCHECK	-	-	14.1	2.89	0.00	0.13	0.0	0.0	1.80	1.0	0.07	0.45	0.00	0.00	-	3.30	0.04	0.02	0.00
73	SMALLMOUTH BUFFALO	17.6	3.2	9.8	0.71	0.70	0.00	0.0	-	0.00	0.0	0.01	0.03	0.00	-	-	4.80	-	-	-
73	CROSSCHECK	-	-	11.1	0.38	0.00	0.27	0.0	0.0	0.50	0.5	0.01	0.17	0.00	0.00	-	3.00	0.00	0.00	0.00
73	SMALLMOUTH BUFFALO	19.2	4.1	11.4	1.30	1.00	1.70	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	13.80	-	-	-
74	CARP	21.6	4.6	9.5	1.40	0.54	0.00	0.0	-	1.20	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	8.7	0.62	0.33	0.07	0.0	0.0	0.30	0.0	0.01	0.01	0.02	0.03	0.02	1.12	0.00	0.03	0.01

STATION 79, CANADIAN RIVER AT EUFAULA, OK

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
70	BLUEGILL	5.5	0.1	2.8	0.17	0.02	0.04	-	-	0.25	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	CARP	13.6	1.1	7.2	0.15	0.08	0.03	-	-	0.27	-	0.03	0.00	0.00	-	-	-	-	0.03	-
70	CARP	13.2	1.2	11.5	0.16	0.20	0.12	-	-	1.36	-	0.05	0.00	0.00	-	-	-	-	0.02	-
70	LARGEMOUTH BASS	11.0	0.8	3.2	0.30	0.07	0.06	-	-	0.14	-	0.01	0.00	0.00	-	-	-	-	0.01	-
71	BLUEGILL	5.8	0.2	2.2	0.12	0.02	0.04	-	-	0.12	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	BLUEGILL	5.9	0.2	1.7	0.22	0.07	0.17	-	-	0.31	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	CARP	13.9	1.3	2.7	0.41	0.07	0.06	-	-	0.42	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	CARP	14.9	1.4	2.7	0.32	0.06	0.03	-	-	0.21	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	15.8	1.4	4.0	0.53	0.08	0.07	-	-	0.28	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	15.4	1.4	6.2	1.28	0.22	0.14	-	-	0.45	-	0.01	0.01	0.00	-	-	0.01	-	-	-
73	BLUEGILL	5.4	0.1	0.8	0.23	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	BLUEGILL	5.0	0.1	0.7	0.15	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	13.7	1.1	2.7	0.28	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	11.0	0.7	4.1	0.26	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 78, VERDIGRIS RIVER AT OOLOGAH, OK

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
70	BLUEGILL	4.7	0.1	1.4	0.04	0.02	0.03	-	-	0.18	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	CARP	15.0	1.7	8.3	0.21	0.08	0.04	-	-	0.21	-	0.03	0.00	0.00	-	-	-	-	0.02	-
70	CARP	14.8	1.6	5.8	1.22	0.29	0.11	-	-	1.01	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	LARGEMOUTH BASS	14.3	2.3	3.8	0.17	0.08	0.09	-	-	0.40	-	0.02	0.00	0.00	-	-	-	-	0.01	-
71	BLUEGILL	6.8	0.1	4.0	0.02	0.02	0.02	-	-	0.11	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	BLUEGILL	6.2	0.1	5.3	0.03	0.01	0.01	-	-	0.06	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	CARP	10.6	0.5	2.8	0.04	0.02	0.02	-	-	0.11	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	CARP	11.1	0.7	2.2	0.02	0.02	0.01	-	-	0.06	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	12.1	0.7	5.8	0.05	0.04	0.04	-	-	0.10	-	0.03	0.01	0.00	-	-	0.01	-	-	-
71	LARGEMOUTH BASS	10.3	0.4	4.6	0.06	0.05	0.05	-	-	0.09	-	0.02	0.01	0.00	-	-	0.01	-	-	-
72	BLUEGILL	6.1	0.2	2.1	0.03	0.00	0.00	-	-	0.30	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	BLUEGILL	5.1	0.1	2.2	0.02	0.01	0.00	-	-	0.00	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	CARP	17.8	3.0	6.4	0.03	0.02	0.00	-	-	0.00	-	0.02	0.00	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	13.6	1.5	5.2	0.10	0.03	0.03	-	-	0.00	-	0.03	0.00	0.00	-	-	0.00	-	-	-
73	BLUEGILL	6.0	0.1	1.9	0.08	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	BLUEGILL	5.9	0.1	1.2	0.05	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	16.7	2.4	13.3	0.09	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	10.2	0.5	2.5	0.05	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 29, ARKANSAS RIVER AT KEYSTONE RESERVOIR, OK

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
70	BLUEGILL	5.4	0.1	1.2	0.04	0.03	0.04	-	-	0.33	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	CARP	13.4	1.2	3.4	0.12	0.04	0.04	-	-	0.36	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	CARP	13.9	1.3	4.0	0.14	0.07	0.06	-	-	0.55	-	0.02	0.00	0.00	-	-	-	-	0.01	-
70	LARGEMOUTH BASS	14.3	1.7	6.5	0.17	0.18	0.15	-	-	1.25	-	0.04	0.00	0.00	-	-	-	-	0.10	-
71	BLUEGILL	5.7	0.1	0.8	0.05	0.03	0.04	-	-	0.33	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	BLUEGILL	5.6	0.1	1.6	0.05	0.06	0.09	-	-	0.67	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	CARP	12.8	0.8	1.8	0.07	0.06	0.04	-	-	0.33	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	CARP	14.6	1.4	1.2	0.04	0.03	0.03	-	-	0.26	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	16.1	1.1	7.9	0.15	0.18	0.14	-	-	1.32	-	0.04	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	16.7	1.2	10.6	0.15	0.20	0.14	-	-	1.25	-	0.07	0.01	0.00	-	-	0.00	-	-	-
72	BLUEGILL	6.3	0.3	2.8	0.06	0.02	0.00	-	-	0.00	-	0.02	0.00	0.00	-	-	0.00	-	-	-
72	CARP	11.7	0.8	3.0	0.06	0.02	0.00	-	-	0.00	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	CARP	13.3	1.1	3.3	0.07	0.01	0.00	-	-	0.50	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	15.5	2.3	6.1	0.09	0.08	0.00	-	-	0.00	-	0.05	0.00	0.00	-	-	0.00	-	-	-
73	BLUEGILL	5.6	0.1	1.9	0.06	0.05	0.00	0.0	-	0.00	0.0	0.05	0.00	0.00	-	-	0.00	-	-	-
73	BLUEGILL	5.6	0.1	2.6	0.05	0.00	0.00	0.0	-	0.00	0.4	0.03	0.00	0.00	-	-	0.00	-	-	-
73	CARP	12.4	0.9	6.9	0.06	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	9.5	0.5	3.1	0.04	0.05	0.00	0.0	-	0.00	0.0	0.04	0.00	0.00	-	-	0.00	-	-	-
74	BLUEGILL	5.1	0.1	0.6	0.04	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CARP	12.5	0.8	0.7	0.02	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CARP	11.3	0.6	0.8	0.02	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	LARGEMOUTH BASS	11.7	1.1	3.1	0.05	0.00	0.00	0.0	-	0.31	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 77, ARKANSAS RIVER AT JOHN MARTIN RESERVOIR, CO

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES			PCB'S (AROCLOR MIXTURES)				CYCLODIENE INSECTICIDES					OTHER COMPOUNDS			
					DDE	DDD	DDT	1242	1248	1254	1260	DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	TOXAPHENE	HCB	A-BHC	G-BHC
70	BLACK BULLHEAD	8.5	0.4	3.2	0.06	0.06	0.04	-	-	0.14	-	0.06	0.00	0.00	-	-	-	-	0.01	-
70	CARP	14.7	1.4	3.2	0.03	0.03	0.02	-	-	0.08	-	0.03	0.00	0.00	-	-	-	-	0.01	-
70	CARP	12.9	1.1	3.7	0.05	0.04	0.02	-	-	0.11	-	0.04	0.00	0.00	-	-	-	-	0.01	-
70	CHANNEL CATFISH	9.2	0.3	9.2	0.06	0.06	0.05	-	-	0.15	-	0.09	0.00	0.00	-	-	-	-	0.03	-
71	BLACK BULLHEAD	9.9	0.6	3.5	0.04	0.03	0.02	-	-	0.09	-	0.02	0.00	0.00	-	-	0.01	-	-	-
71	BLACK BULLHEAD	9.2	0.4	1.1	0.05	0.02	0.02	-	-	0.13	-	0.01	0.00	0.00	-	-	0.01	-	-	-
71	CARP	13.7	1.2	2.4	0.04	0.04	0.02	-	-	0.05	-	0.02	0.00	0.00	-	-	0.01	-	-	-
71	CARP	13.5	1.2	3.0	0.04	0.03	0.02	-	-	0.06	-	0.01	0.00	0.00	-	-	0.01	-	-	-
71	CHANNEL CATFISH	15.0	1.3	8.9	0.04	0.02	0.01	-	-	0.08	-	0.01	0.00	0.00	-	-	0.01	-	-	-
71	CHANNEL CATFISH	13.2	0.8	4.9	0.04	0.04	0.03	-	-	0.15	-	0.02	0.00	0.00	-	-	0.01	-	-	-
72	CARP	15.0	1.8	1.7	0.04	0.01	0.00	-	-	0.01	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	CARP	12.5	1.0	1.8	0.05	0.03	0.00	-	-	0.10	-	0.01	0.00	0.00	-	-	0.00	-	-	-
73	BLACK BULLHEAD	9.6	0.5	0.7	0.02	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	14.2	1.4	5.3	0.04	0.01	0.00	0.0	-	0.00	0.0	0.05	0.00	0.00	-	-	0.00	-	-	-
73	CARP	14.4	1.5	6.0	0.04	0.02	0.00	0.0	-	0.00	0.0	0.05	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	14.9	1.0	6.2	0.07	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 76, MISSISSIPPI RIVER AT MEMPHIS, TN/AR

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES			PCB'S (AROCLOR MIXTURES)				CYCLODIENE INSECTICIDES					OTHER COMPOUNDS			
					DDE	DDD	DDT	1242	1248	1254	1260	DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	TOXAPHENE	HCB	A-BHC	G-BHC
70	CARP	19.0	4.0	6.4	1.02	0.46	0.33	-	-	3.26	-	0.10	0.04	0.00	-	-	-	-	0.01	-
70	CARPSUCKER	16.5	2.4	21.0	0.64	0.99	0.78	-	-	5.73	-	0.25	0.09	0.00	-	-	-	-	0.01	-
70	CARPSUCKER	17.0	2.9	17.3	0.73	0.91	0.65	-	-	4.04	-	0.18	0.05	0.00	-	-	-	-	0.01	-
70	FRESHWATER DRUM	20.0	3.9	17.0	0.96	1.37	1.71	-	-	8.07	-	0.24	0.09	0.00	-	-	-	-	0.01	-
70	CROSSCHECK	-	-	16.6	0.69	1.62	3.20	-	0.0	4.50	3.4	0.42	0.08	0.00	-	-	0.00	-	-	-
71	CARP	21.3	5.2	11.1	0.43	0.28	0.13	-	-	0.94	-	0.14	0.34	0.00	-	-	0.00	-	-	-
71	CARP	20.8	5.0	9.3	0.70	0.42	0.15	-	-	1.51	-	0.20	0.56	0.00	-	-	0.00	-	-	-
71	CARPSUCKER	18.5	4.0	18.9	0.54	0.55	0.64	-	-	1.15	-	0.27	0.82	0.00	-	-	0.00	-	-	-
71	CARPSUCKER	17.0	2.8	19.7	0.80	0.40	0.93	-	-	0.94	-	0.17	0.72	0.00	-	-	0.00	-	-	-
72	CARP	20.2	4.1	8.5	0.40	0.19	0.00	-	-	10.00	-	0.41	0.73	0.17	-	-	0.00	-	-	-
72	CARP	21.1	4.1	13.5	1.00	0.02	0.66	-	-	0.00	-	0.21	0.19	0.00	-	-	0.00	-	-	-
72	CHANNEL CATFISH	15.2	1.1	7.3	0.24	0.21	0.33	-	-	5.40	-	0.20	0.23	0.09	-	-	0.00	-	-	-
72	FRESHWATER DRUM	12.2	0.7	4.1	0.42	0.16	0.07	-	-	6.00	-	0.18	0.06	0.07	-	-	0.00	-	-	-
72	CROSSCHECK	-	-	4.8	0.44	0.00	0.24	-	0.0	2.80	3.0	0.12	0.04	0.00	0.16	-	2.00	0.00	-	-
73	CARP	19.7	4.1	5.5	0.46	0.01	0.00	0.0	-	1.50	0.0	0.11	0.11	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	6.8	0.24	0.20	0.03	0.0	0.0	1.60	0.8	0.22	0.14	0.00	0.01	-	0.50	0.00	0.00	0.00
73	FLATHEAD CATFISH	15.1	1.6	9.3	1.20	0.16	0.00	0.0	-	13.00	0.0	0.46	0.51	0.00	-	-	0.00	-	-	-
73	FRESHWATER DRUM	14.9	1.8	9.1	0.34	0.44	0.41	0.0	-	5.40	0.0	0.61	0.46	0.00	-	-	0.00	-	-	-
73	FRESHWATER DRUM	10.5	0.8	7.0	0.54	0.88	0.48	0.0	-	5.90	0.0	0.07	0.03	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	17.9	2.1	17.5	0.15	0.25	0.19	0.0	-	0.85	0.0	0.42	0.19	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	19.0	0.72	0.30	0.24	0.0	0.0	1.00	0.8	0.06	0.01	0.13	0.27	0.18	0.00	0.00	0.39	0.00
74	FRESHWATER DRUM	11.1	0.6	6.2	0.32	0.00	0.21	0.0	-	2.90	0.0	0.53	0.00	0.00	-	-	0.00	-	-	-
74	FRESHWATER DRUM	16.6	2.2	8.8	0.52	0.10	0.00	0.0	-	1.70	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	SMALLMOUTH BUFFALO	14.6	1.7	11.2	0.90	1.10	0.77	0.0	-	0.00	0.0	0.82	0.00	0.00	-	-	0.00	-	-	-

STATION 75, MISSISSIPPI RIVER AT CAPE GIRARDEAU, MO/IL

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES			PCB'S (AROCLOR MIXTURES)				CYCLODIENE INSECTICIDES					OTHER COMPOUNDS			
					DDE	DDD	DDT	1242	1248	1254	1260	DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	TOXAPHENE	HCB	A-BHC	G-BHC
70	CARP	18.2	3.0	13.2	0.38	0.73	0.45	-	-	5.26	-	0.50	0.00	0.00	-	-	-	-	0.28	-
70	CROSSCHECK	-	-	12.4	0.32	0.48	0.11	-	12.8	5.40	3.2	1.09	0.00	0.15	-	-	10.00	-	-	-
70	CHANNEL CATFISH	15.4	1.3	12.4	0.20	0.52	0.35	-	-	3.96	-	0.34	0.00	0.00	-	-	-	-	0.30	-
70	CHANNEL CATFISH	15.7	1.2	11.8	0.17	0.40	0.22	-	-	3.07	-	0.26	0.00	0.00	-	-	-	-	0.02	-
70	WHITE CRAPPIE	10.7	0.7	3.0	0.21	0.44	0.30	-	-	3.59	-	0.24	0.00	0.00	-	-	-	-	0.14	-
71	CARP	18.5	3.0	8.5	0.22	0.37	0.17	-	-	2.24	-	0.18	0.01	0.00	-	-	0.00	-	-	-
71	CARP	18.6	3.2	9.1	0.23	0.25	0.11	-	-	1.54	-	0.19	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	16.0	1.2	5.5	0.21	0.34	0.20	-	-	3.80	-	0.10	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	16.3	1.3	4.9	0.17	0.28	0.18	-	-	2.60	-	0.09	0.01	0.00	-	-	0.00	-	-	-
71	WHITE CRAPPIE	10.4	0.6	2.5	0.07	0.12	0.08	-	-	1.59	-	0.08	0.01	0.00	-	-	0.00	-	-	-
71	WHITE CRAPPIE	11.8	1.2	5.2	0.12	0.22	0.10	-	-	3.10	-	0.17	0.01	0.00	-	-	0.00	-	-	-
71	CROSSCHECK	-	-	6.3	0.22	0.26	0.10	-	8.2	2.00	2.2	0.44	0.40	0.02	0.22	-	0.00	0.05	-	-
72	CARP	14.4	1.5	4.3	0.16	0.10	0.00	-	-	1.90	-	0.13	0.00	0.00	-	-	0.00	-	-	-
72	CARP	14.3	1.3	2.5	0.65	0.09	0.00	-	-	4.45	-	0.08	0.00	0.00	-	-	0.00	-	-	-
72	WHITE CATFISH	14.1	1.4	8.5	0.43	7.60	0.00	-	-	0.18	-	0.27	0.00	0.00	-	-	0.00	-	-	-
72	WHITE CRAPPIE	10.7	0.6	2.5	0.00	0.08	0.00	-	-	1.80	-	0.16	0.00	0.00	-	-	0.00	-	-	-
72	CROSSCHECK	-	-	2.8	0.14	0.07	0.04	-	0.5	1.80	0.8	0.20	0.00	0.00	0.10	-	0.00	0.05	-	-
73	CARP	14.7	1.7	8.2	0.10	0.08	0.00	0.0	-	1.70	0.0	0.27	0.00	0.00	-	-	0.00	-	-	-
73	CARP	12.4	1.1	6.9	0.10	0.06	0.00	0.0	-	2.10	0.0	0.24	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	12.3	0.7	5.8	0.26	0.00	0.00	0.0	-	0.00	1.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	WHITE CRAPPIE	9.0	0.4	2.6	0.07	0.07	0.00	0.0	-	0.80	0.0	0.19	0.00	0.00	-	-	0.00	-	-	-
74	CARP	11.7	0.9	4.3	0.13	0.20	0.00	0.0	-	2.20	0.0	0.19	0.00	0.00	-	-	0.00	-	-	-
74	CARP	11.8	0.9	3.2	0.15	0.09	0.00	0.0	-	0.00	2.5	0.12	0.00	0.00	-	-	0.00	-	-	-
74	WHITE CRAPPIE	7.7	0.3	1.0	0.09	0.07	0.00	0.0	-	1.20	0.0	0.11	0.00	0.00	-	-	0.00	-	-	-

STATION 26, ILLINOIS RIVER AT BEARDSTOWN, IL

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES			PCB'S (AROCLOR MIXTURES)				CYCLODIENE INSECTICIDES					OTHER COMPOUNDS			
					DDE	DDD	DDT	1242	1248	1254	1260	DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	TOXAPHENE	HCB	A-BHC	G-BHC
70	BIGMOUTH BUFFALO	18.6	3.9	7.9	0.06	0.06	0.05	-	-	0.25	-	0.48	0.01	0.00	-	-	-	-	0.05	-
70	CARP	14.2	1.4	8.0	0.13	0.11	0.07	-	-	0.73	-	0.36	0.00	0.00	-	-	-	-	0.04	-
70	CARP	16.3	2.1	7.6	0.27	0.13	0.10	-	-	0.92	-	0.24	0.00	0.00	-	-	-	-	0.03	-
70	WHITE CRAPPIE	7.3	0.2	2.8	0.06	0.07	0.06	-	-	0.57	-	0.48	0.00	0.40	-	-	-	-	0.01	-
70	CROSSCHECK	-	-	2.8	0.04	0.08	0.02	-	0.7	0.50	0.0	0.76	0.00	0.00	-	-	0.00	-	-	-
71	BIGMOUTH BUFFALO	16.4	3.0	4.8	0.07	0.09	0.03	-	-	0.34	-	0.21	0.01	0.00	-	-	0.00	-	-	-
71	BIGMOUTH BUFFALO	18.7	4.2	7.7	0.13	0.21	0.05	-	-	0.58	-	0.48	0.00	0.00	-	-	0.00	-	-	-
71	CROSSCHECK	-	-	8.3	0.47	0.23	0.04	-	4.7	0.90	0.4	0.30	0.00	0.05	0.15	-	0.00	0.00	-	-
71	CARP	15.1	1.6	4.2	0.11	0.12	0.06	-	-	0.72	-	0.12	0.01	0.00	-	-	0.00	-	-	-
71	CARP	13.9	1.4	5.7	0.11	0.12	0.06	-	-	0.55	-	0.21	0.00	0.00	-	-	0.00	-	-	-
71	WHITE CRAPPIE	8.9	0.4	1.3	0.10	0.11	0.08	-	-	0.89	-	0.13	0.01	0.00	-	-	0.00	-	-	-
71	WHITE CRAPPIE	9.4	0.5	2.2	0.09	0.13	0.07	-	-	0.81	-	0.18	0.01	0.00	-	-	0.00	-	-	-
72	CARP	14.2	1.3	4.9	0.17	0.16	0.00	-	-	2.10	-	0.31	0.00	0.00	-	-	0.00	-	-	-
72	SMALLMOUTH BUFFALO	13.2	1.2	4.2	0.10	0.08	0.00	-	-	1.20	-	0.20	0.00	0.00	-	-	0.00	-	-	-
72	WHITE CRAPPIE	10.1	0.6	3.5	0.09	0.09	0.00	-	-	1.40	-	0.18	0.00	0.00	-	-	0.00	-	-	-
72	WHITE CRAPPIE	9.6	0.5	3.8	0.07	0.10	0.00	-	-	0.00	-	0.19	0.00	0.00	-	-	0.00	-	-	-
73	BLACK CRAPPIE	5.6	0.1	1.2	0.05	0.03	0.00	0.0	-	1.20	0.0	0.10	0.00	0.00	-	-	0.00	-	-	-
73	CARP	12.2	1.0	4.2	0.05	0.09	0.00	0.0	-	1.00	0.0	0.21	0.00	0.00	-	-	0.00	-	-	-
73	CARP	12.6	1.1	5.9	0.12	0.08	0.00	0.0	-	1.90	0.0	0.20	0.00	0.00	-	-	0.00	-	-	-
73	FRESHWATER DRUM	9.4	0.4	7.6	0.08	0.01	0.00	0.0	-	2.00	0.0	0.89	0.00	0.03	-	-	0.00	-	-	-
74	BIGMOUTH BUFFALO	13.5	1.5	5.4	0.10	0.00	0.00	0.0	-	0.90	0.0	0.56	0.00	0.00	-	-	0.00	-	-	-
74	BLACK BULLHEAD	8.4	0.4	3.7	0.14	0.00	0.00	0.0	-	1.10	0.0	0.52	0.00	0.00	-	-	0.00	-	-	-
74	WHITE CRAPPIE	10.0	0.8	3.5	0.43	0.43	0.00	0.0	-	4.70	0.0	0.65	0.00	0.00	-	-	0.00	-	-	-

STATION 73, DES MOINES RIVER AT KEOSAUQUA, IA

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES			PCB'S (AROCLOR MIXTURES)				CYCLODIENE INSECTICIDES					OTHER COMPOUNDS			
					DDE	DDD	DDT	1242	1248	1254	1260	DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	TOXAPHENE	HCB	A-BHC	G-BHC
70	CARP	12.8	1.3	6.2	0.06	0.06	0.02	-	-	0.19	-	0.07	0.00	0.00	-	-	-	-	0.01	-
70	CARP	12.1	0.9	6.7	0.05	0.05	0.03	-	-	0.26	-	0.07	0.00	0.00	-	-	-	-	0.02	-
70	CHANNEL CATFISH	10.3	0.4	11.8	0.06	0.09	0.73	-	-	0.40	-	0.15	0.00	0.00	-	-	-	-	0.02	-
70	WALLEYE	12.6	0.9	6.8	0.15	0.20	0.18	-	-	1.44	-	0.29	0.00	0.00	-	-	-	-	0.03	-
71	CARP	12.5	0.9	4.7	0.04	0.04	0.02	-	-	0.15	-	0.08	0.01	0.00	-	-	0.00	-	-	-
71	CARP	13.0	1.2	8.3	0.06	0.05	0.02	-	-	0.17	-	0.06	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	12.6	0.7	11.6	0.13	0.15	0.12	-	-	0.97	-	0.11	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	13.0	0.7	6.2	0.10	0.13	0.10	-	-	0.74	-	0.11	0.01	0.00	-	-	0.00	-	-	-
71	SAUGER	13.9	0.9	4.2	0.13	0.13	0.11	-	-	1.12	-	0.10	0.01	0.00	-	-	0.00	-	-	-
71	WALLEYE	13.6	0.8	0.6	0.06	0.05	0.05	-	-	0.47	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	CARP	15.2	1.6	7.4	0.15	0.11	0.00	-	-	1.90	-	0.26	0.00	0.00	-	-	0.00	-	-	-
72	CARP	13.2	1.0	5.6	0.08	0.00	0.00	-	-	0.60	-	0.12	0.00	0.00	-	-	0.00	-	-	-
72	CHANNEL CATFISH	14.3	0.7	5.1	0.12	0.00	0.00	-	-	1.60	-	0.17	0.00	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	13.1	1.2	2.5	0.03	0.00	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	WALLEYE	14.7	1.3	4.5	0.11	0.00	0.00	-	-	0.30	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	11.8	0.8	2.6	0.11	0.00	0.00	0.0	-	0.60	0.0	0.09	0.00	0.00	-	-	0.00	-	-	-
73	CARP	11.8	0.8	2.2	0.09	0.09	0.00	0.0	-	0.40	0.0	0.16	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	10.7	0.4	3.0	0.09	0.03	0.00	0.0	-	0.90	0.0	0.15	0.00	0.00	-	-	0.00	-	-	-
73	WALLEYE	7.4	0.1	0.4	0.01	0.00	0.00	0.0	-	0.00	0.0	0.01	0.00	0.00	-	-	0.00	-	-	-
74	CARP	14.5	1.6	8.3	0.10	0.00	0.00	0.0	-	0.50	0.0	0.60	0.00	0.00	-	-	0.00	-	-	-
74	CARP	14.8	1.8	9.7	0.21	0.00	0.00	0.0	-	0.80	0.0	0.86	0.00	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	14.6	1.2	7.1	0.19	0.00	0.00	0.0	-	0.90	0.0	0.42	0.00	0.00	-	-	0.00	-	-	-
74	WALLEYE	11.1	0.5	4.0	0.02	0.00	0.00	0.0	-	0.20	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 27, MISSISSIPPI RIVER AT GUTTENBURG, IA/WI

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES			PCB'S (AROCLOR MIXTURES)				CYCLODIENE INSECTICIDES					OTHER COMPOUNDS			
					DDE	DDD	DDT	1242	1248	1254	1260	DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	TOXAPHENE	HCB	A-BHC	G-BHC
70	BLUEGILL	8.3	0.4	2.5	0.05	0.07	0.06	-	-	0.60	-	0.05	0.00	0.00	-	-	-	-	0.01	-
70	BLUEGILL	8.0	0.4	2.5	0.07	0.06	0.06	-	-	0.53	-	0.01	0.01	0.00	-	-	-	-	0.00	-
70	CARP	18.8	2.9	7.2	1.48	0.20	0.05	-	-	0.30	-	0.04	0.00	0.00	-	-	-	-	0.01	-
70	LARGEMOUTH BASS	15.3	2.1	2.9	0.13	0.18	0.15	-	-	1.79	-	0.02	0.00	0.00	-	-	-	-	0.01	-
71	BLUEGILL	6.3	0.2	1.9	0.04	0.07	0.06	-	-	0.65	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	BLUEGILL	6.7	0.3	3.8	0.03	0.06	0.05	-	-	0.56	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	CARP	17.9	3.5	5.8	0.08	0.14	0.11	-	-	1.00	-	0.02	0.00	0.00	-	-	0.00	-	-	-
71	CARP	19.5	4.4	10.2	0.11	0.18	0.13	-	-	1.42	-	0.05	0.00	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	13.8	2.0	3.0	0.06	0.12	0.10	-	-	0.90	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	13.2	1.9	3.0	0.09	0.16	0.15	-	-	1.32	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	BLUEGILL	7.3	0.3	3.0	0.00	0.02	0.00	-	-	0.40	-	0.02	0.00	0.00	-	-	0.00	-	-	-
72	CARP	16.5	2.2	7.7	0.00	0.02	0.00	-	-	1.00	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	11.6	0.9	2.6	0.00	0.02	0.00	-	-	1.40	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	11.2	0.8	3.2	0.00	0.00	0.00	-	-	1.10	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	BLUEGILL	7.3	0.3	2.6	0.01	0.00	0.00	0.0	-	0.49	0.0	0.01	0.00	0.00	-	-	0.00	-	-	-
73	BLUEGILL	4.7	0.1	1.8	0.01	0.00	0.00	0.0	-	0.37	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	17.8	2.7	6.8	0.03	0.00	0.00	0.0	-	1.20	0.0	0.02	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	12.2	1.2	3.2	0.01	0.00	0.00	0.0	-	0.96	0.0	0.02	0.00	0.00	-	-	0.00	-	-	-
74	BLUEGILL	6.4	0.2	2.9	0.09	0.02	0.00	0.0	-	1.10	0.0	0.03	0.00	0.00	-	-	0.00	-	-	-
74	BLUEGILL	6.3	0.2	3.3	0.06	0.04	0.00	0.0	-	0.60	0.0	0.04	0.00	0.00	-	-	0.00	-	-	-
74	CARP	16.2	5.2	8.5	0.11	0.06	0.00	0.0	-	1.50	0.0	0.06	0.00	0.00	-	-	0.00	-	-	-
74	LARGEMOUTH BASS	11.2	0.8	3.7	0.04	0.03	0.00	0.0	-	1.20	0.0	0.05	0.00	0.00	-	-	0.00	-	-	-

STATION 72, WISCONSIN RIVER AT WOODMAN, WI

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES			PCB'S (AROCLOR MIXTURES)				CYCLODIENE INSECTICIDES					OTHER COMPOUNDS			
					DDE	DDD	DDT	1242	1248	1254	1260	DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	TOXAPHENE	HCB	A-BHC	G-BHC
70	CARP	18.2	3.3	7.3	0.09	0.12	0.05	-	-	0.67	-	0.02	0.00	0.00	-	-	-	-	0.01	-
70	CARP	19.3	4.0	9.9	0.10	0.09	0.04	-	-	0.48	-	0.03	0.00	0.00	-	-	-	-	0.01	-
70	CHANNEL CATFISH	16.7	2.1	2.7	0.43	0.05	0.02	-	-	0.17	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	SMALLMOUTH BASS	11.7	1.0	3.4	0.07	0.11	0.07	-	-	0.82	-	0.02	0.00	0.00	-	-	-	-	0.01	-
71	CARP	18.7	3.4	5.6	0.05	0.04	0.03	-	-	1.87	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	CARP	20.5	4.0	7.4	0.09	0.11	0.04	-	-	1.02	-	0.00	0.00	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	16.3	1.4	10.2	0.10	0.15	0.10	-	-	1.20	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	17.4	1.6	4.9	0.07	0.09	0.06	-	-	1.02	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	SAUGER	11.3	0.4	2.1	0.14	0.21	0.18	-	-	3.28	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	SAUGER	13.9	1.0	3.0	0.11	0.13	0.10	-	-	3.80	-	0.00	0.01	0.00	-	-	0.00	-	-	-
71	SMALLMOUTH BASS	10.8	0.7	2.4	0.05	0.10	0.06	-	-	2.55	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	SMALLMOUTH BASS	14.6	1.7	2.7	0.05	0.08	0.05	-	-	1.09	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	MOONEYE	10.3	0.4	5.8	0.00	0.04	0.00	-	-	2.10	-	0.02	0.00	0.00	-	-	0.00	-	-	-
72	SMALLMOUTH BUFFALO	15.6	2.3	7.2	0.06	0.08	0.00	-	-	2.90	-	0.03	0.00	0.00	-	-	0.00	-	-	-
72	WHITE SUCKER	15.2	1.5	2.5	0.03	0.03	0.02	-	-	0.70	-	0.02	0.00	0.00	-	-	0.00	-	-	-
72	WHITE SUCKER	13.0	1.2	2.7	0.01	0.02	0.01	-	-	0.10	-	0.01	0.05	0.00	-	-	0.00	-	-	-
73	CARP	21.3	4.6	9.5	0.09	0.00	0.00	1.7	-	0.50	0.0	0.03	0.00	0.00	-	-	0.00	-	-	-
73	CARP	20.0	4.0	9.5	0.08	0.00	0.00	1.8	-	0.80	0.8	0.04	0.00	0.00	-	-	0.00	-	-	-
73	SAUGER	14.3	0.7	1.8	0.06	0.00	0.00	0.8	-	0.00	0.8	0.00	0.00	0.00	-	-	0.00	-	-	-
73	SMALLMOUTH BASS	12.1	1.0	2.2	0.01	0.00	0.00	0.5	-	0.30	0.0	0.01	0.00	0.00	-	-	0.00	-	-	-
74	CARP	14.7	2.6	9.2	0.23	0.00	0.00	0.0	-	0.57	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	18.2	1.8	2.2	0.13	0.00	0.00	0.0	-	3.10	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	SMALLMOUTH BASS	13.5	1.4	4.2	0.02	0.00	0.00	0.0	-	0.23	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	SMALLMOUTH BASS	12.5	1.1	4.1	0.16	0.00	0.00	0.0	-	2.50	0.0	0.04	0.00	0.00	-	-	0.00	-	-	-

STATION 111, MISSISSIPPI RIVER AT LAKE CITY, MN/WI

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES			PCB'S (AROCLOR MIXTURES)				CYCLODIENE INSECTICIDES					OTHER COMPOUNDS			
					DDE	DDD	DDT	1242	1248	1254	1260	DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	TOXAPHENE	HCB	A-BHC	G-BHC
74	CARP	17.2	3.0	11.8	0.00	0.00	0.00	0.0	-	7.60	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	SAUGER	15.5	1.5	2.7	0.34	0.00	0.00	0.0	-	14.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	SAUGER	16.0	1.6	10.2	0.40	0.44	0.00	0.0	-	15.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	10.7	0.12	0.16	0.02	0.0	0.0	1.95	0.9	0.03	0.02	0.01	0.06	0.02	0.00	0.02	0.08	0.01
74	WHITE SUCKER	16.7	0.2	6.0	0.17	0.10	0.00	0.0	-	7.50	0.0	0.05	0.00	0.00	-	-	0.00	-	-	-

STATION 74, MISSISSIPPI RIVER AT LITTLE FALLS, MN

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES			PCB'S (AROCLOR MIXTURES)				CYCLODIENE INSECTICIDES					OTHER COMPOUNDS			
					DDE	DDD	DDT	1242	1248	1254	1260	DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	TOXAPHENE	HCB	A-BHC	G-BHC
70	NORTHERN PIKE	14.3	0.8	1.3	0.04	0.03	0.02	-	-	0.22	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	WHITE SUCKER	13.5	1.2	1.6	0.03	0.05	0.03	-	-	0.27	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	WHITE SUCKER	13.8	1.2	2.0	0.13	0.09	0.06	-	-	0.35	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	YELLOW BULLHEAD	10.2	0.8	6.8	0.04	0.12	0.18	-	-	0.31	-	0.01	0.00	0.00	-	-	-	-	0.01	-
71	BLACK BULLHEAD	7.1	0.3	3.2	0.02	0.02	0.02	-	-	0.11	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	BLACK BULLHEAD	7.0	0.3	3.0	0.02	0.02	0.01	-	-	0.08	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	NORTHERN PIKE	18.2	1.4	1.3	0.04	0.02	0.02	-	-	0.13	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	NORTHERN PIKE	13.7	0.4	0.1	0.02	0.01	0.02	-	-	0.13	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	WHITE SUCKER	18.8	2.9	0.4	0.12	0.04	0.06	-	-	0.38	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	WHITE SUCKER	18.6	2.8	0.2	0.06	0.02	0.03	-	-	0.19	-	0.01	0.01	0.00	-	-	0.00	-	-	-
72	NORTHERN PIKE	25.9	3.9	1.0	0.03	0.01	0.01	-	-	0.02	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	WHITE SUCKER	18.7	3.1	3.0	0.00	0.00	0.00	-	-	0.00	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	WHITE SUCKER	18.5	2.9	2.3	0.00	0.00	0.00	-	-	0.00	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	YELLOW BULLHEAD	11.5	2.1	3.7	0.15	0.01	0.01	-	-	0.02	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	WALLEYE	10.0	0.4	1.1	0.01	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	WHITE SUCKER	17.0	2.1	1.8	0.01	0.00	0.00	0.0	-	0.10	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	YELLOW BULLHEAD	9.9	0.6	4.0	0.07	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	BLACK BULLHEAD	9.6	0.6	4.0	0.03	0.00	0.00	0.0	-	0.23	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	BLACK BULLHEAD	9.8	0.6	2.4	0.02	0.00	0.00	0.0	-	0.20	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	WHITE SUCKER	18.0	2.3	2.4	0.04	0.00	0.00	0.0	-	0.33	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 70, OHIO RIVER AT METROPOLIS, IL/KY

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	CARP	15.0	1.8	6.1	0.22	0.28	0.20	-	-	2.01	-	0.08	0.00	0.00	-	-	-	-	0.06	-
70	CHANNEL CATFISH	11.5	0.5	5.9	0.20	0.37	0.32	-	-	3.78	-	0.04	0.00	0.00	-	-	-	-	0.08	-
70	WHITE CRAPPIE	9.9	0.5	2.2	0.28	0.34	0.29	-	-	3.12	-	0.08	0.00	0.00	-	-	-	-	0.06	-
70	WHITE CRAPPIE	10.0	0.4	1.3	0.25	0.27	0.25	-	-	2.39	-	0.06	0.00	0.00	-	-	-	-	0.04	-
71	CARP	18.4	3.6	5.0	0.60	0.40	0.28	-	-	3.33	-	0.07	0.01	0.00	-	-	0.00	-	-	-
71	CARP	17.3	2.8	6.8	0.32	0.26	0.14	-	-	2.99	-	0.08	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	14.1	0.9	8.3	0.26	0.59	0.41	-	-	5.99	-	0.05	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	14.6	1.0	9.4	0.34	0.57	0.41	-	-	6.15	-	0.04	0.01	0.00	-	-	0.00	-	-	-
71	WHITE CRAPPIE	10.4	0.7	3.3	0.23	0.30	0.14	-	-	1.38	-	0.05	0.01	0.00	-	-	0.00	-	-	-
71	WHITE CRAPPIE	10.1	0.6	1.6	0.23	0.28	0.32	-	-	2.99	-	0.05	0.01	0.00	-	-	0.00	-	-	-
72	CARP	17.7	3.0	8.5	0.48	0.88	0.00	-	-	7.10	-	0.05	0.00	0.00	-	-	0.00	-	-	-
72	CHANNEL CATFISH	-	-	9.6	0.00	0.00	0.00	-	-	5.70	-	0.44	0.00	0.00	-	-	0.00	-	-	-
72	WHITE CRAPPIE	11.4	0.9	4.9	0.15	0.00	0.00	-	-	2.70	-	0.23	0.00	0.00	-	-	0.00	-	-	-
72	WHITE CRAPPIE	11.2	0.9	4.6	0.15	0.03	0.00	-	-	3.10	-	0.18	0.00	0.00	-	-	0.00	-	-	-
73	CARP	17.6	2.6	6.4	0.34	0.20	0.00	0.0	-	1.40	0.0	0.05	0.02	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	14.6	1.1	12.6	0.22	0.25	0.00	0.0	-	5.00	0.0	0.15	0.06	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	14.5	0.17	0.16	0.03	0.0	1.3	2.30	5.0	0.19	1.00	0.02	0.03	-	0.00	0.07	0.01	0.01
73	WHITE CRAPPIE	10.9	0.6	4.3	0.11	0.16	0.00	0.0	-	1.30	0.0	0.02	0.01	0.00	-	-	0.00	-	-	-
73	WHITE CRAPPIE	10.0	0.5	4.5	0.09	0.15	0.00	0.0	-	1.20	0.0	0.02	0.01	0.00	-	-	0.00	-	-	-
74	CARP	15.9	1.8	4.3	0.59	0.25	0.00	0.0	-	2.50	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	9.6	0.2	7.0	0.00	0.00	0.00	0.0	-	2.20	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	WHITE CRAPPIE	7.8	0.4	1.3	0.21	0.10	0.00	0.0	-	1.30	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	WHITE CRAPPIE	7.3	0.2	1.9	0.15	0.00	0.00	0.0	-	1.20	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 71, TENNESSEE RIVER AT SAVANNAH, TN

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	CARP	16.0	1.9	4.8	0.89	0.67	0.01	-	-	1.46	-	0.02	0.01	0.00	-	-	-	-	0.16	-
70	CHANNEL CATFISH	12.8	0.6	7.3	1.02	1.20	0.49	-	-	4.17	-	0.03	0.02	0.00	-	-	-	-	0.27	-
70	CHANNEL CATFISH	13.0	0.6	7.2	1.12	1.27	0.51	-	-	4.48	-	0.03	0.02	0.00	-	-	-	-	0.27	-
70	LARGEMOUTH BASS	15.2	2.2	2.3	0.77	0.46	0.18	-	-	1.20	-	0.01	0.01	0.00	-	-	-	-	0.04	-
71	CARP	17.3	2.4	4.7	0.37	0.38	0.06	-	-	0.34	-	0.01	0.04	0.00	-	-	0.00	-	-	-
71	CARP	17.3	2.7	2.8	0.33	0.34	0.05	-	-	0.33	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	13.4	0.8	7.5	0.85	0.93	0.28	-	-	3.23	-	0.02	0.01	0.00	-	-	0.00	-	-	-
71	CROSSCHECK	-	-	7.6	1.02	1.22	0.30	-	0.0	2.40	1.3	0.02	0.06	0.00	0.00	-	0.00	0.06	-	-
71	CHANNEL CATFISH	12.5	0.7	7.0	0.77	0.73	0.26	-	-	3.13	-	0.02	0.02	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	12.9	1.2	1.5	0.36	0.23	0.08	-	-	0.63	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	12.9	1.1	1.6	0.30	0.25	0.09	-	-	0.63	-	0.01	0.01	0.00	-	-	0.00	-	-	-
72	CARP	19.3	3.7	7.0	1.60	1.70	0.00	-	-	6.60	-	0.00	0.19	0.00	-	-	0.00	-	-	-
72	CARP	18.4	2.7	6.5	1.20	1.40	0.00	-	-	2.70	-	0.00	0.18	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	9.5	0.3	3.3	2.20	1.80	0.40	-	-	11.00	-	0.00	0.21	0.00	-	-	0.00	-	-	-
72	CROSSCHECK	-	-	4.7	2.40	1.13	0.52	-	3.2	4.70	7.8	0.05	0.23	0.00	0.00	-	0.00	0.04	-	-
72	WHITE SUCKER	15.0	1.4	3.1	0.75	0.85	0.00	-	-	3.20	-	0.00	0.15	0.00	-	-	0.00	-	-	-
73	BLUEGILL	5.5	0.1	2.1	0.31	0.15	0.00	0.0	-	1.20	0.0	0.01	0.02	0.00	-	-	0.00	-	-	-
73	CARP	17.1	2.6	7.7	0.37	0.38	0.00	0.0	-	1.20	0.0	0.16	0.00	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	7.8	0.30	0.12	0.03	0.0	0.0	2.00	1.0	0.03	1.90	0.00	0.00	-	0.50	0.01	0.00	0.00
73	CARP	17.9	3.0	6.5	0.89	0.64	0.00	0.0	-	1.80	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	16.3	2.1	4.5	1.60	0.62	0.00	0.0	-	9.80	0.0	0.01	0.02	0.00	-	-	1.10	-	-	-
73	LARGEMOUTH BASS	11.1	0.8	1.8	1.40	0.61	0.00	0.0	-	3.10	0.0	0.11	0.00	0.00	-	-	1.40	-	-	-
74	CARP	16.1	1.8	1.1	0.24	0.33	0.29	0.0	-	1.30	0.0	0.45	0.19	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	1.6	0.30	0.12	0.00	0.0	0.0	0.95	0.3	0.01	0.02	0.00	0.02	0.01	0.00	0.00	0.00	0.00
74	CARP	13.6	0.7	1.5	0.65	0.21	0.02	0.0	-	1.20	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	17.5	2.3	8.4	0.57	0.65	0.17	0.0	-	1.10	0.0	0.00	0.21	0.00	-	-	0.00	-	-	-
74	LARGEMOUTH BASS	12.9	1.2	8.1	0.21	0.00	0.00	0.0	-	0.85	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 25, CUMBERLAND RIVER AT CLARKSVILLE, TN

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	BLUEGILL	5.8	0.1	2.6	0.17	0.18	0.13	-	-	1.20	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	BLUEGILL	5.8	0.1	1.5	0.09	0.12	0.09	-	-	0.89	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	CARP	13.5	1.4	2.0	0.23	0.34	0.15	-	-	1.67	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	LARGEMOUTH BASS	11.0	0.8	3.2	0.26	0.47	0.26	-	-	2.92	-	0.02	0.00	0.00	-	-	-	-	0.02	-
71	BLUEGILL	5.5	0.1	1.8	0.14	0.16	0.15	-	-	1.64	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	BLUEGILL	6.0	0.1	1.4	0.15	0.17	0.15	-	-	1.64	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	CARP	10.8	0.5	0.8	0.05	0.06	0.07	-	-	0.92	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	CARP	9.5	0.4	0.9	0.05	0.05	0.05	-	-	0.45	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	9.6	0.6	2.2	0.10	0.14	0.13	-	-	1.19	-	0.01	0.01	0.00	-	-	0.00	-	-	-
72	BLUEGILL	6.5	0.1	2.0	0.25	0.07	0.00	-	-	3.00	-	0.02	0.00	0.00	-	-	0.00	-	-	-
72	BLUEGILL	6.2	0.1	2.0	0.19	0.06	0.00	-	-	2.10	-	0.02	0.00	0.00	-	-	0.00	-	-	-
72	CARP	16.3	1.9	3.7	2.20	0.41	0.00	-	-	16.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	13.4	1.6	3.9	0.43	0.24	0.00	-	-	5.00	-	0.03	0.00	0.00	-	-	0.00	-	-	-
73	BLUEGILL	6.0	0.1	1.8	0.07	0.05	0.00	0.0	-	1.60	0.0	0.01	0.01	0.00	-	-	0.00	-	-	-
73	BLUEGILL	5.8	0.1	1.4	0.10	0.00	0.00	0.0	-	1.50	0.0	0.01	0.01	0.00	-	-	0.00	-	-	-
73	CARP	15.1	1.7	4.3	0.36	0.00	0.00	0.0	-	4.30	0.0	0.01	0.01	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	4.5	0.39	0.36	0.02	0.0	0.0	2.00	0.4	0.01	0.00	0.00	0.01	-	0.50	0.01	0.00	0.00
73	LARGEMOUTH BASS	15.3	2.3	4.1	0.32	0.19	0.00	0.0	-	5.80	0.0	0.04	0.02	0.00	-	-	0.00	-	-	-
74	BLUEGILL	6.5	0.4	4.6	0.26	0.14	0.00	0.0	-	3.20	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CARP	15.8	1.7	4.3	0.47	0.20	0.00	0.0	-	4.50	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	4.9	0.22	0.13	0.01	0.0	0.0	1.52	0.5	0.01	0.01	0.01	0.06	0.02	0.00	0.00	0.02	0.01
74	CARP	14.8	1.5	6.0	0.55	0.20	0.00	0.0	-	3.50	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	LARGEMOUTH BASS	11.0	0.7	2.4	0.10	0.00	0.00	0.0	-	0.98	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 68, WABASH RIVER AT NEW HARMONY, IN/IL

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	CARP	16.8	2.3	5.2	0.13	0.33	0.23	-	-	3.10	-	0.08	0.00	0.00	-	-	-	-	0.01	-
70	CHANNEL CATFISH	12.4	0.7	7.0	0.10	0.15	0.08	-	-	1.07	-	0.09	0.00	0.00	-	-	-	-	0.03	-
70	WHITE CRAPPIE	8.6	0.3	0.8	0.07	0.13	0.08	-	-	1.00	-	0.04	0.00	0.00	-	-	-	-	0.01	-
70	WHITE CRAPPIE	7.6	0.2	0.8	0.06	0.11	0.06	-	-	0.82	-	0.04	0.00	0.00	-	-	-	-	0.01	-
71	CARP	19.8	4.3	7.0	0.31	0.36	0.32	-	-	1.15	-	0.16	0.00	0.00	-	-	0.00	-	-	-
71	CARP	19.2	3.5	9.3	0.33	0.29	0.11	-	-	1.12	-	0.19	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	16.0	1.6	8.1	0.32	0.46	0.34	-	-	4.77	-	0.30	0.00	0.00	-	-	0.00	-	-	-
71	CROSSCHECK	-	-	9.0	0.35	0.08	0.03	-	4.8	8.00	2.6	0.49	0.00	0.00	0.32	-	0.00	0.02	-	-
71	CHANNEL CATFISH	17.7	1.9	5.5	0.22	0.30	0.26	-	-	3.13	-	0.14	0.01	0.00	-	-	0.00	-	-	-
71	WHITE CRAPPIE	9.2	0.4	0.7	0.35	0.43	0.34	-	-	2.48	-	0.24	0.01	0.00	-	-	0.00	-	-	-
71	WHITE CRAPPIE	9.5	0.4	0.7	0.06	0.09	0.05	-	-	0.70	-	0.06	0.01	0.00	-	-	0.00	-	-	-
72	CARP	17.4	2.8	5.9	0.00	0.03	0.00	-	-	1.60	-	0.13	0.00	0.00	-	-	0.00	-	-	-
72	CHANNEL CATFISH	11.3	0.3	3.9	0.00	0.00	0.00	-	-	3.30	-	0.04	0.00	0.00	-	-	0.00	-	-	-
72	CROSSCHECK	-	-	4.1	0.06	0.00	0.06	-	1.1	1.50	1.0	0.14	0.00	0.00	0.11	-	0.00	0.01	-	-
72	WHITE CRAPPIE	9.3	0.4	1.7	0.05	0.02	0.00	-	-	0.80	-	0.08	0.00	0.00	-	-	0.00	-	-	-
72	WHITE CRAPPIE	8.0	0.4	1.7	1.00	0.01	0.00	-	-	0.00	-	0.09	0.00	0.00	-	-	0.00	-	-	-
73	CARP	17.5	2.9	6.9	0.30	0.10	0.00	0.0	-	0.40	0.0	0.29	0.00	0.00	-	-	0.00	-	-	-
73	CARP	18.9	3.6	5.4	0.14	0.10	0.06	0.0	-	1.10	0.0	0.23	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	14.6	0.9	5.1	0.16	0.07	0.04	0.0	-	2.10	0.0	0.17	0.00	0.00	-	-	0.00	-	-	-
73	WHITE CRAPPIE	9.2	0.4	2.6	0.06	0.04	0.00	0.0	-	1.00	0.0	0.17	0.00	0.00	-	-	0.00	-	-	-
74	CARP	17.0	2.4	5.1	0.00	0.00	0.00	0.0	-	4.50	0.0	0.72	0.00	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	15.5	1.1	6.6	0.00	0.00	0.00	0.0	-	1.40	0.0	0.60	0.00	0.00	-	-	0.00	-	-	-
74	WHITE CRAPPIE	7.0	0.2	2.4	0.00	0.00	0.00	0.0	-	0.85	0.0	0.21	0.00	0.00	-	-	0.00	-	-	-

STATION 69, OHIO RIVER AT CINCINNATI, OH/KY

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	CARP	18.5	3.1	14.4	1.28	3.59	2.55	-	-	23.40	-	0.15	0.00	0.00	-	-	-	-	1.77	-
70	CARP	16.6	3.3	12.7	1.54	4.14	2.99	-	-	24.70	-	0.14	0.00	0.00	-	-	-	-	1.75	-
70	CROSSCHECK	-	-	10.1	0.38	0.20	0.05	-	75.0	42.00	6.0	0.18	0.02	0.10	-	-	0.00	-	-	-
70	SAUGER	13.9	0.9	5.2	1.04	2.84	1.93	-	-	18.20	-	0.08	0.00	0.00	-	-	-	-	0.59	-
70	WHITE CRAPPIE	8.6	0.3	1.5	1.07	3.12	1.85	-	-	20.80	-	0.08	0.00	0.00	-	-	-	-	0.60	-
70	CROSSCHECK	-	-	11.4	0.08	0.20	0.08	-	17.0	27.00	5.6	0.48	0.00	0.08	-	-	0.00	-	-	-
71	CARP	15.3	1.9	9.1	0.91	1.07	1.46	-	-	33.90	-	0.16	0.01	0.00	-	-	0.00	-	-	-
71	CARP	14.4	1.7	10.8	0.62	1.07	0.85	-	-	17.60	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	14.5	1.3	7.1	1.01	2.77	1.79	-	-	32.60	-	0.10	0.01	0.00	-	-	0.00	-	-	-
71	CROSSCHECK	-	-	7.7	0.02	0.24	0.16	-	75.0	67.00	14.0	0.23	0.00	0.00	0.78	-	0.00	0.13	-	-
71	CHANNEL CATFISH	14.3	0.9	3.7	0.35	1.85	1.11	-	-	22.10	-	0.07	0.01	0.00	-	-	0.00	-	-	-
71	SAUGER	12.9	0.8	5.7	0.39	0.63	0.48	-	-	13.30	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	SAUGER	12.7	0.7	5.4	0.46	0.91	0.59	-	-	9.90	-	0.09	0.01	0.00	-	-	0.00	-	-	-
72	CARP	14.8	1.6	6.3	0.00	0.17	0.00	-	-	19.00	-	0.16	0.00	0.00	-	-	0.00	-	-	-
72	CROSSCHECK	-	-	7.5	0.01	0.11	0.05	-	8.4	9.90	2.0	0.15	0.00	0.00	0.28	-	0.00	0.03	-	-
72	CHANNEL CATFISH	14.9	1.1	5.5	0.00	0.10	0.00	-	-	30.00	-	0.14	0.00	0.00	-	-	0.00	-	-	-
72	CROSSCHECK	-	-	8.0	1.03	0.07	0.14	-	17.0	23.00	3.0	0.22	0.00	0.04	0.38	-	0.00	0.06	-	-
72	SAUGER	11.7	0.5	3.3	0.00	0.18	0.00	-	-	16.20	-	0.16	0.00	0.00	-	-	0.00	-	-	-
72	SAUGER	12.8	0.9	8.5	0.00	0.00	0.00	-	-	30.00	-	0.10	0.00	0.00	-	-	0.00	-	-	-
73	CARP	16.4	2.2	7.9	0.00	0.08	0.00	0.0	-	25.00	0.0	0.14	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	16.4	1.5	5.0	0.00	0.09	0.00	0.0	-	25.00	0.0	0.08	0.00	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	4.4	0.30	0.01	0.03	0.0	2.5	40.00	3.0	0.12	0.00	0.00	0.01	-	0.00	0.04	0.00	0.00
73	CHANNEL CATFISH	16.9	1.5	5.9	0.00	0.02	0.00	0.0	-	18.00	0.0	0.01	0.00	0.00	-	-	0.00	-	-	-
73	SAUGER	10.4	0.4	2.4	0.00	0.00	0.00	0.0	-	2.40	0.0	0.01	0.00	0.00	-	-	0.00	-	-	-
74	CARP	15.4	1.9	9.3	0.00	0.15	0.00	0.0	-	9.10	0.0	0.17	0.00	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	16.7	1.5	4.4	0.00	0.20	0.00	0.0	-	39.00	0.0	0.28	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	3.9	0.32	0.30	0.09	0.0	0.0	14.45	3.9	0.00	0.00	0.00	0.56	0.14	0.00	0.00	0.16	0.00
74	CHANNEL CATFISH	13.8	0.8	6.7	0.00	0.16	0.00	0.0	-	26.00	0.0	0.48	0.00	0.00	-	-	0.00	-	-	-
74	WHITE CRAPPIE	10.1	0.6	5.0	0.00	0.13	0.00	0.0	-	4.10	0.0	0.33	0.00	0.00	-	-	0.00	-	-	-

STATION 23, KANAWHA RIVER AT WINFIELD, WV

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	BLACK CRAPPIE	6.8	0.2	3.9	0.19	0.39	0.18	-	-	2.45	-	0.03	0.00	0.00	-	-	-	-	0.21	-
70	BROWN BULLHEAD	6.4	0.2	5.9	0.06	0.19	0.07	-	-	0.62	-	0.03	0.00	0.00	-	-	-	-	0.13	-
70	BROWN BULLHEAD	6.5	0.2	6.8	0.57	1.82	0.91	-	-	14.30	-	0.06	0.00	0.00	-	-	-	-	0.16	-
70	CROSSCHECK	-	-	6.2	0.30	0.16	0.05	-	0.0	0.90	0.6	0.01	0.00	0.08	-	-	0.00	-	-	-
70	CARP	8.9	0.4	5.5	0.23	0.27	0.15	-	-	1.25	-	0.07	0.00	0.00	-	-	-	-	0.11	-
71	BROWN BULLHEAD	10.9	0.8	6.5	0.19	0.30	0.16	-	-	1.35	-	0.02	0.00	0.00	-	-	0.00	-	-	-
71	BROWN BULLHEAD	11.5	0.8	6.4	0.23	0.42	0.18	-	-	1.77	-	0.02	0.00	0.00	-	-	0.00	-	-	-
71	CROSSCHECK	-	-	7.1	0.16	0.11	0.06	-	3.1	2.40	1.2	0.04	0.00	0.07	0.17	-	2.00	0.08	-	-
71	CARP	11.3	0.9	6.4	0.05	0.10	0.06	-	-	0.60	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	CARP	12.0	1.0	7.9	0.09	0.09	0.02	-	-	0.62	-	0.02	0.00	0.00	-	-	0.00	-	-	-
71	WHITE CRAPPIE	9.2	0.5	4.6	0.18	0.29	0.17	-	-	1.77	-	0.02	0.00	0.00	-	-	0.00	-	-	-
71	WHITE CRAPPIE	9.2	0.5	4.6	0.16	0.24	0.15	-	-	1.61	-	0.02	0.00	0.00	-	-	0.00	-	-	-
72	BROWN BULLHEAD	10.4	0.5	7.6	0.00	0.18	0.00	-	-	2.90	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	BROWN BULLHEAD	10.9	0.5	1.8	0.00	0.23	0.00	-	-	3.10	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	CARP	10.1	1.4	7.2	0.75	0.00	0.00	-	-	13.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	WHITE CRAPPIE	7.5	0.2	1.1	0.13	0.06	0.00	-	-	2.60	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	CROSSCHECK	-	-	1.6	0.07	0.00	0.03	-	0.1	1.00	0.6	0.01	0.00	0.00	0.07	-	0.50	0.02	-	-
73	BROWN BULLHEAD	11.9	0.8	6.0	0.00	0.00	0.00	3.9	-	3.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	11.4	0.7	2.2	0.00	0.00	0.00	2.3	-	1.50	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	2.7	0.01	0.00	0.00	0.3	0.0	0.80	0.2	0.01	0.00	0.00	0.03	-	0.00	0.03	0.02	0.00
73	PUMPKINSEED	7.6	0.2	2.7	0.00	0.00	0.00	3.7	-	0.90	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	PUMPKINSEED	9.0	0.4	10.2	0.09	0.00	0.00	0.0	-	2.10	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	BLACK CRAPPIE	9.2	0.4	4.5	0.11	0.05	0.00	0.0	-	6.90	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	BLACK CRAPPIE	7.5	0.2	2.3	0.03	0.03	0.00	0.0	-	1.50	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	BROWN BULLHEAD	9.2	0.4	6.5	0.05	0.09	0.00	0.0	-	1.30	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CARP	16.2	2.3	4.2	0.05	0.05	0.00	0.0	-	1.80	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	5.0	0.09	0.06	0.02	0.0	0.0	0.90	0.8	0.03	0.01	0.01	0.10	0.02	0.00	0.02	0.02	0.01

STATION 24, OHIO RIVER AT MARIETTA, OH/WV

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	CARP	15.1	2.4	8.2	0.56	0.81	0.38	-	-	4.82	-	0.12	0.00	0.00	-	-	-	-	0.13	-
70	CHANNEL CATFISH	14.8	0.8	8.9	1.04	1.42	0.85	-	-	11.70	-	0.03	0.00	0.00	-	-	-	-	0.13	-
70	CROSSCHECK	-	-	7.9	0.24	0.26	0.10	-	5.2	12.60	4.6	0.06	0.00	0.02	-	-	0.00	-	-	-
70	CHANNEL CATFISH	14.9	0.9	10.4	1.30	1.58	0.90	-	-	12.00	-	0.04	0.00	0.00	-	-	-	-	0.16	-
70	CROSSCHECK	-	-	9.3	0.24	0.22	0.20	-	23.0	11.00	4.9	0.03	0.00	0.00	-	-	0.00	-	-	-
70	REDHORSE	11.7	0.6	3.4	0.25	0.41	0.26	-	-	2.50	-	0.03	0.00	0.00	-	-	-	-	0.12	-
71	CARP	19.1	3.9	7.0	0.17	0.22	0.12	-	-	7.16	-	0.03	0.01	0.00	-	-	0.00	-	-	-
71	CARP	14.0	1.4	7.0	0.09	0.13	0.07	-	-	3.23	-,	0.02	0.00	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	14.8	1.1	11.7	0.46	0.57	0.33	-	-	11.80	-	0.05	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	13.1	0.7	12.7	0.53	0.81	0.37	-	-	17.20	-	0.05	0.01	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	12.6	1.5	9.9	0.40	0.53	0.27	-	-	20.60	-	0.07	0.01	0.00	-	-	0.00	-	-	-
71	CROSSCHECK	-	-	11.0	0.04	0.14	0.12	-	59.0	14.00	3.8	0.14	0.01	0.00	0.54	-	0.00	0.23	-	-
71	LARGEMOUTH BASS	13.3	1.4	9.9	0.48	0.65	0.33	-	-	24.70	-	0.07	0.01	0.00	-	-	0.00	-	-	-
72	CARP	13.1	1.2	4.6	0.44	0.04	0.00	-	-	2.50	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	CHANNEL CATFISH	14.6	0.9	6.8	0.45	0.20	0.00	-	-	9.50	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	CROSSCHECK	-	-	9.2	0.32	0.05	0.10	-	9.6	5.00	1.3	0.04	0.00	0.00	0.36	-	0.00	0.08	-	-
72	CHANNEL CATFISH	14.3	0.8	6.1	0.65	0.13	0.11	-	-	11.00	-	0.05	0.00	0.00	-	-	0.00	-	-	-
72	REDHORSE	10.4	0.8	4.0	0.00	0.00	0.00	-	-	3.20	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	14.9	1.8	11.8	0.00	0.00	0.00	6.7	-	4.30	0.0	0.06	0.00	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	12.8	0.03	0.06	0.05	0.0	4.5	1.00	0.5	0.03	0.02	0.00	0.13	-	0.00	0.08	0.07	0.01
73	CHANNEL CATFISH	15.0	1.0	8.3	0.00	0.13	0.00	15.0	-	9.00	0.0	0.03	0.00	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	8.8	0.12	0.06	0.16	0.0	4.5	1.50	1.5	0.03	0.02	0.00	0.19	-	0.00	0.29	0.11	0.00
73	CHANNEL CATFISH	14.3	0.9	10.4	0.00	0.00	0.00	11.0	-	13.00	0.0	0.04	0.00	0.00	-	-	0.00	-	-	-
73	SPOTTED SUCKER	12.4	0.7	2.7	0.00	0.00	0.00	1.6	-	1.40	0.0	0.01	0.00	0.00	-	-	0.00	-	-	-
74	CARP	13.6	1.5	12.4	0.00	0.00	0.00	0.0	-	2.20	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	13.8	1.2	10.0	0.00	0.00	0.00	0.0	-	8.70	0.0	0.13	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	7.8	0.07	0.00	0.02	0.0	0.0	1.64	0.6	0.03	0.01	0.01	0.18	0.06	0.00	0.02	0.02	0.01
74	SPOTTED BASS	8.7	0.3	6.3	0.00	0.00	0.00	0.0	-	1.70	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	SPOTTED BASS	8.0	0.2	4.3	0.00	0.00	0.00	0.0	-	2.30	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 67, ALLEGHENY RIVER AT NATRONA, PA

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	BLUEGILL	5.5	0.2	3.2	0.24	0.89	0.69	-	-	7.45	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	CARP	14.8	2.0	6.6	0.43	0.65	0.47	-	-	4.38	-	0.01	0.00	0.00	-	-	-	-	0.06	-
70	CARP	14.8	2.0	8.2	0.42	0.66	0.45	-	-	4.79	-	0.02	0.00	0.00	-	-	-	-	0.09	-
70	WALLEYE	12.7	0.6	5.0	0.81	2.37	1.91	-	-	24.80	-	0.01	0.00	0.00	-	-	-	-	0.06	-
70	CROSSCHECK	-	-	4.0	0.08	0.04	0.05	-	5.2	25.00	4.6	0.03	0.00	0.00	-	-	0.00	-	-	-
71	CARP	16.4	1.9	9.2	0.70	0.80	0.65	-	-	5.47	-	0.02	0.00	0.00	-	-	0.00	-	-	-
71	CARP	18.8	3.8	10.2	0.51	0.68	0.56	-	-	5.57	-	0.02	0.00	0.00	-	-	0.00	-	-	-
71	WALLEYE	12.4	0.7	8.4	0.70	1.35	1.16	-	-	13.40	-	0.04	0.01	0.00	-	-	0.00	-	-	-
71	CROSSCHECK	-	-	8.3	0.07	0.10	0.05	-	23.0	35.00	6.6	0.07	0.00	0.00	0.42	-	0.00	0.04	-	-
71	WALLEYE	16.4	1.5	4.7	0.67	0.85	0.83	-	-	9.69	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	YELLOW PERCH	9.6	0.5	2.7	0.05	0.11	0.10	-	-	0.92	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	YELLOW PERCH	7.9	0.2	2.3	0.08	0.15	0.15	-	-	1.52	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	CARP	17.8	2.9	7.0	0.13	0.03	0.00	-	-	4.00	-	0.02	0.00	0.00	-	-	0.00	-	-	-
72	SMALLMOUTH BASS	9.9	0.4	3.0	0.12	0.05	0.03	-	-	4.90	-	0.02	0.00	0.00	-	-	0.00	-	-	-
72	SMALLMOUTH BASS	11.0	0.7	4.3	0.19	0.07	0.01	-	-	6.40	-	0.02	0.00	0.00	-	-	0.00	-	-	-
72	WALLEYE	15.6	1.0	2.9	1.30	0.11	0.00	-	-	21.00	-	0.03	0.00	0.00	-	-	0.00	-	-	-
72	CROSSCHECK	-	-	3.0	0.57	0.00	0.19	-	7.3	13.00	3.1	0.04	0.02	0.00	0.42	-	0.00	0.01	-	-
73	CARP	16.8	2.3	5.4	0.05	0.00	0.00	0.0	-	2.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	6.2	0.03	0.05	0.02	0.0	0.3	1.00	0.5	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00
73	CARP	17.2	2.5	5.1	0.13	0.00	0.00	0.0	-	1.50	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	SMALLMOUTH BASS	10.8	0.8	3.7	0.06	0.00	0.00	0.0	-	1.70	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	WALLEYE	15.3	1.2	5.0	0.17	0.00	0.00	0.0	-	9.60	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	BLUEGILL	6.3	0.2	4.6	0.07	0.09	0.00	0.2	-	1.90	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	BLUEGILL	6.2	0.2	3.7	0.11	0.16	0.00	0.0	-	1.30	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CARP	12.6	2.6	6.4	0.60	0.00	0.00	0.0	-	10.50	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	4.9	0.21	0.06	0.05	0.0	0.0	5.25	1.2	0.02	0.01	0.01	0.07	0.03	0.00	0.00	0.01	0.01
74	WALLEYE	13.4	0.8	4.4	0.55	0.16	0.00	0.0	-	10.40	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 83, MISSOURI RIVER AT HERRMAN, MO

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	BIGMOUTH BUFFALO	17.9	3.7	6.5	0.13	0.20	0.12	-	-	0.94	-	0.40	0.00	0.00	-	-	-	-	0.05	-
70	CARP	19.4	3.7	9.5	0.15	0.27	0.13	-	-	1.90	-	0.27	0.00	0.00	-	-	-	-	0.06	-
70	CARP	18.8	2.9	6.8	0.14	0.15	0.07	-	-	0.68	-	0.19	0.00	0.00	-	-	-	-	0.01	-
70	CHANNEL CATFISH	16.3	2.0	7.9	0.64	0.98	0.44	-	-	3.12	-	0.31	0.00	0.00	-	-	-	-	0.03	-
70	CROSSCHECK	-	-	4.6	0.30	1.06	0.15	-	0.0	3.10	1.8	0.31	0.00	0.00	-	-	0.00	-	-	-
71	CARP	17.5	2.4	9.3	0.15	0.17	0.08	-	-	0.90	-	0.17	0.03	0.00	-	-	0.00	-	-	-
71	CARP	17.2	2.4	17.4	0.48	0.25	0.13	-	-	14.30	-	0.18	0.02	0.00	-	-	0.00	-	-	-
71	SMALLMOUTH BUFFALO	15.7	2.2	7.8	0.14	0.15	0.11	-	-	1.25	-	0.20	0.01	0.00	-	-	0.00	-	-	-
71	CROSSCHECK	-	-	8.2	0.10	0.20	0.08	-	3.9	3.00	1.1	0.18	0.01	0.22	0.09	-	0.00	0.02	-	-
71	SMALLMOUTH BUFFALO	17.0	2.9	9.3	0.12	0.14	0.09	-	-	0.90	-	0.07	0.01	0.00	-	-	0.00	-	-	-
72	CARP	20.3	4.0	7.3	0.81	0.47	0.00	-	-	2.10	-	0.31	0.00	0.00	-	-	0.00	-	-	-
72	CARP	19.2	3.4	7.7	0.25	0.11	0.02	-	-	3.50	-	0.25	0.00	0.00	-	-	0.00	-	-	-
72	CHANNEL CATFISH	16.4	2.1	11.0	0.29	0.36	0.00	-	-	2.00	-	0.53	0.00	0.00	-	-	0.00	-	-	-
72	SMALLMOUTH BUFFALO	16.8	2.7	7.7	0.40	0.22	0.16	-	-	6.00	-	0.60	0.00	0.00	-	-	0.00	-	-	-
72	BLUE CATFISH	14.7	1.0	10.3	0.75	0.00	0.00	-	-	9.50	-	0.83	0.00	0.00	-	-	0.00	-	-	-
73	BIGMOUTH BUFFALO	18.5	3.6	5.1	0.02	0.09	0.00	0.0	-	0.00	0.7	0.28	0.00	0.00	-	-	0.00	-	-	-
73	CARP	19.4	4.0	9.8	0.14	0.00	0.00	0.0	-	0.00	0.6	0.29	0.00	0.02	-	-	0.00	-	-	-
73	CARP	21.6	4.7	8.0	0.22	0.17	0.00	3.1	-	0.00	1.0	0.22	0.00	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	10.2	0.12	0.09	0.05	0.3	0.0	1.00	1.3	0.75	0.01	0.00	0.05	-	0.00	0.00	0.04	0.00
73	FRESHWATER DRUM	16.8	3.0	13.8	0.07	0.06	0.00	0.9	-	0.00	0.6	0.41	0.00	0.00	-	-	0.00	-	-	-
74	CARP	18.4	3.1	7.8	0.30	0.13	0.07	0.0	-	1.70	0.0	0.81	0.00	0.00	-	-	0.00	-	-	-
74	CARP	18.6	2.9	12.4	0.24	0.06	0.00	0.0	-	0.87	0.0	1.10	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	6.5	0.23	0.30	0.04	0.0	0.0	0.00	0.0	0.11	0.01	0.03	0.04	0.04	0.00	0.01	0.02	0.00
74	CHANNEL CATFISH	20.7	2.9	12.3	0.30	0.14	0.11	0.0	-	2.10	0.0	0.81	0.00	0.00	-	-	0.00	-	-	-
74	FRESHWATER DRUM	12.0	0.8	7.6	0.08	0.01	0.10	0.0	-	0.46	0.0	0.45	0.00	0.00	-	-	0.00	-	-	-
74	SMALLMOUTH BUFFALO	16.1	2.4	10.3	0.13	0.08	0.12	0.0	-	1.00	0.0	0.48	0.00	0.00	-	-	0.00	-	-	-

STATION 90, KANSAS RIVER AT BONNER SPRINGS, KS

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	CARP	14.8	1.9	8.5	0.11	0.16	0.07	-	-	0.49	-	0.07	0.00	0.00	-	-	-	-	0.01	-
70	CARP	15.8	2.8	9.0	0.14	0.17	0.09	-	-	0.62	-	0.12	0.00	0.00	-	-	-	-	0.06	-
70	FRESHWATER DRUM	9.9	0.7	5.5	0.25	0.20	0.25	-	-	0.96	-	0.14	0.00	0.00	-	-	-	-	0.07	-
70	GIZZARD SHAD	7.2	0.2	12.1	0.10	0.25	0.29	-	-	2.08	-	0.26	0.00	0.00	-	-	-	-	0.10	-
71	CARP	18.7	3.1	8.1	0.59	0.85	0.95	-	-	2.21	-	0.03	0.00	0.00	-	-	0.00	-	-	-
71	CARP	13.6	1.4	3.6	0.10	0.12	0.10	-	-	0.36	-	0.05	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	8.1	0.1	2.4	0.10	0.13	0.19	-	-	0.88	-	0.12	0.00	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	7.8	0.1	2.7	0.08	0.12	0.06	-	-	0.67	-	0.02	0.00	0.00	-	-	0.00	-	-	-
71	GIZZARD SHAD	7.8	0.3	7.5	0.22	0.34	0.30	-	-	1.51	-	0.19	0.00	0.00	-	-	0.00	-	-	-
71	GIZZARD SHAD	7.2	0.3	8.1	0.21	0.25	0.10	-	-	1.46	-	0.08	0.00	0.00	-	-	0.00	-	-	-
72	CARP	20.5	4.1	4.9	0.17	0.24	0.02	-	-	1.30	-	0.22	0.00	0.00	-	-	0.00	-	-	-
72	GIZZARD SHAD	11.3	0.5	2.6	0.12	0.11	0.05	-	-	0.70	-	0.16	0.00	0.00	-	-	0.00	-	-	-
72	GIZZARD SHAD	9.7	0.3	2.3	0.00	0.12	0.11	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	16.1	2.3	5.0	0.00	0.20	0.00	0.0	-	0.70	0.0	0.20	0.00	0.00	-	-	0.00	-	-	-
73	CARP	16.5	2.3	5.0	0.08	0.08	0.00	0.0	-	0.00	0.5	0.24	0.00	0.00	-	-	0.00	-	-	-
73	FRESHWATER DRUM	11.4	0.6	3.1	0.06	0.02	0.00	0.0	-	0.00	0.6	0.10	0.00	0.01	-	-	0.00	-	-	-
73	GIZZARD SHAD	8.6	0.2	7.6	0.03	0.00	0.00	0.0	-	0.00	0.0	0.75	0.00	0.05	-	-	0.00	-	-	-
74	CARP	15.2	2.1	10.7	0.09	0.08	0.08	0.0	-	0.50	0.0	0.50	0.00	0.00	-	-	0.00	-	-	-
74	CARP	14.6	1.8	6.6	0.10	0.04	0.08	0.6	-	0.49	0.0	0.19	0.00	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	14.3	1.2	10.0	0.18	0.09	0.09	0.0	-	0.55	0.0	0.32	0.00	0.00	-	-	0.00	-	-	-
74	FRESHWATER DRUM	10.5	0.6	6.9	0.08	0.03	0.07	0.0	-	0.64	0.0	0.22	0.00	0.00	-	-	0.00	-	-	-

STATION 31, MISSOURI RIVER AT NEBRASKA CITY, NE/IA

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
70	CARP	17.1	2.4	8.5	0.27	0.26	0.11	-	-	1.10	-	0.09	0.00	0.00	-	-	-	-	0.03	-
70	CARP	16.9	2.2	5.4	0.29	0.31	0.15	-	-	1.67	-	0.09	0.00	0.00	-	-	-	-	0.03	-
70	GOLDEYE	13.0	0.9	11.8	5.40	1.13	3.72	-	-	4.82	-	0.19	0.00	0.00	-	-	-	-	0.03	-
70	CROSSCHECK	-	-	10.2	4.63	1.20	3.60	-	2.4	2.30	1.4	0.23	0.00	0.00	-	-	0.00	-	-	-
71	CARP	17.4	2.8	6.4	0.13	0.15	0.07	-	-	0.50	-	0.16	0.01	0.00	-	-	0.00	-	-	-
71	CARP	16.3	2.2	8.2	0.19	0.11	0.08	-	-	0.56	-	0.09	0.01	0.00	-	-	0.00	-	-	-
71	GOLDEYE	14.1	1.0	13.3	0.33	0.28	0.31	-	-	1.43	-	0.08	0.01	0.00	-	-	0.00	-	-	-
71	GOLDEYE	13.7	0.9	14.0	0.20	0.23	0.21	-	-	1.46	-	0.12	0.01	0.00	-	-	0.00	-	-	-
71	CROSSCHECK	-	-	14.4	0.26	0.16	0.22	-	1.7	2.20	0.9	0.27	0.00	0.04	0.10	-	0.00	0.01	-	-
71	WHITE CRAPPIE	9.5	0.5	2.6	0.06	0.09	0.05	-	-	0.35	-	0.05	0.01	0.00	-	-	0.00	-	-	-
71	WHITE CRAPPIE	8.4	0.3	1.5	0.05	0.05	0.03	-	-	0.24	-	0.03	0.01	0.00	-	-	0.00	-	-	-
72	CARP	17.9	2.9	9.1	0.17	0.11	0.00	-	-	0.63	-	0.11	0.00	0.00	-	-	0.00	-	-	-
72	CARP	16.6	2.2	8.3	0.25	0.15	0.00	-	-	0.72	-	0.14	0.00	0.00	-	-	0.00	-	-	-
72	CHANNEL CATFISH	15.0	1.1	9.0	0.13	0.16	0.00	-	-	0.50	-	0.20	0.00	0.00	-	-	0.00	-	-	-
72	GOLDEYE	15.6	0.9	12.3	0.43	0.16	0.00	-	-	3.12	-	0.11	0.00	0.00	-	-	0.00	-	-	-
73	CARP	13.3	1.4	4.7	0.08	0.03	0.00	0.0	-	0.20	0.0	0.04	0.00	0.00	-	-	0.00	-	-	-
73	CARP	13.6	1.5	4.3	0.10	0.00	0.00	0.0	-	0.40	0.0	0.05	0.00	0.00	-	-	0.00	-	-	-
73	GOLDEYE	14.3	1.1	12.5	0.23	0.18	0.00	0.0	-	2.40	0.0	0.09	0.00	0.00	-	-	0.00	-	-	-
73	WHITE CRAPPIE	9.7	0.6	2.7	0.08	0.00	0.00	0.0	-	0.30	0.0	0.09	0.00	0.00	-	-	0.00	-	-	-
74	CARP	13.8	1.3	5.8	0.27	0.09	0.05	0.0	-	0.00	0.3	0.10	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	9.3	0.10	0.06	0.03	0.0	0.0	0.37	0.0	0.12	0.02	0.02	0.07	0.00	0.00	0.01	0.01	0.00
74	CARP	13.3	1.1	6.7	0.15	0.09	0.00	0.0	-	0.00	0.0	0.06	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	8.3	0.09	0.11	0.00	0.0	0.0	0.00	0.0	0.07	0.01	0.01	0.04	0.00	0.00	0.00	0.01	0.00
74	GOLDEYE	11.5	0.5	10.4	1.50	0.17	0.76	0.0	-	0.00	1.3	0.10	0.00	0.00	-	-	0.00	-	-	-
74	WHITE CRAPPIE	7.6	0.2	1.1	0.05	0.00	0.00	0.0	-	0.32	0.0	0.05	0.00	0.00	-	-	0.00	-	-	-

STATION 89, PLATTE RIVER AT LOUISVILLE, NE

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
70	CARP	19.7	3.7	1.8	0.62	0.18	0.07	-	-	0.75	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	CARP	12.2	0.8	2.2	0.38	0.14	0.08	-	-	0.67	-	0.02	0.00	0.00	-	-	-	-	0.01	-
70	CHANNEL CATFISH	12.6	0.6	4.1	0.22	0.42	0.12	-	-	0.62	-	0.05	0.00	0.00	-	-	-	-	0.01	-
70	WHITE CRAPPIE	7.6	0.3	5.2	0.21	0.27	0.10	-	-	0.82	-	0.05	0.00	0.00	-	-	-	-	0.01	-
71	CARP	16.4	2.0	4.8	0.17	0.23	0.03	-	-	0.21	-	0.05	0.01	0.00	-	-	0.00	-	-	-
71	CARP	16.6	2.0	5.1	0.16	0.15	0.05	-	-	0.26	-	0.06	0.00	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	12.1	0.5	4.7	0.19	0.44	0.08	-	-	0.45	-	0.05	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	10.2	0.4	5.0	0.24	0.48	0.11	-	-	0.42	-	0.07	0.01	0.00	-	-	0.00	-	-	-
71	WHITE CRAPPIE	9.8	0.5	3.6	0.09	0.14	0.07	-	-	0.35	-	0.04	0.01	0.00	-	-	0.00	-	-	-
71	WHITE CRAPPIE	8.1	0.3	1.4	0.09	0.12	0.03	-	-	0.22	-	0.03	0.01	0.00	-	-	0.00	-	-	-
72	CARP	15.4	1.7	6.2	0.45	0.40	0.00	-	-	1.00	-	0.10	0.00	0.00	-	-	0.00	-	-	-
72	CARP	16.3	16.3	4.9	0.43	0.18	0.00	-	-	2.00	-	0.09	0.00	0.00	-	-	0.00	-	-	-
72	CHANNEL CATFISH	15.4	1.2	4.3	0.62	0.01	0.00	-	-	4.30	-	0.09	0.00	0.00	-	-	0.00	-	-	-
72	WHITE CRAPPIE	5.5	0.4	3.5	0.08	0.12	0.00	-	-	0.81	-	0.02	0.00	0.01	-	-	0.00	-	-	-
73	CARP	13.5	1.5	6.0	0.57	0.14	0.00	0.0	-	0.40	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	12.9	1.2	4.7	0.04	0.02	0.00	0.0	-	0.20	0.0	0.06	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	12.5	0.7	8.0	0.10	0.26	0.00	0.0	-	1.70	0.0	0.08	0.00	0.00	-	-	0.00	-	-	-
73	WHITE CRAPPIE	8.6	0.4	3.3	0.00	0.09	0.10	0.0	-	0.40	0.0	0.00	0.02	0.00	-	-	0.00	-	-	-
74	CARP	12.1	1.0	5.8	0.07	0.05	0.07	0.0	-	0.20	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CARP	12.2	0.8	5.2	0.08	0.04	0.06	0.0	-	0.21	0.0	0.04	0.00	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	9.6	0.3	2.6	0.09	0.02	0.00	0.0	-	0.26	0.0	0.05	0.00	0.00	-	-	0.00	-	-	-
74	MIXED SPECIES	12.0	0.8	9.2	0.30	0.48	0.00	0.0	-	2.20	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 88, SOUTH PLATTE RIVER AT BRULE, NE

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
70	CARP	5.6	0.1	3.4	0.06	0.02	0.01	-	-	0.08	-	0.02	0.00	0.00	-	-	-	-	0.01	-
70	GREEN SUNFISH	4.8	0.1	3.8	0.16	0.04	0.04	-	-	0.21	-	0.02	0.00	0.00	-	-	-	-	0.01	-
70	WHITE SUCKER	12.0	0.7	1.0	0.08	0.02	0.03	-	-	0.21	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	WHITE SUCKER	10.2	0.5	2.3	0.11	0.04	0.04	-	-	0.24	-	0.01	0.00	0.00	-	-	-	-	0.01	-
71	BLACK BULLHEAD	8.4	0.4	2.0	0.12	0.05	0.05	-	-	0.35	-	0.02	0.01	0.00	-	-	0.00	-	-	-
71	BLACK BULLHEAD	8.3	0.3	2.2	0.09	0.05	0.04	-	-	0.35	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	CARP	18.1	2.5	4.2	0.08	0.05	0.03	-	-	0.24	-	0.02	0.01	0.00	-	-	0.00	-	-	-
71	CARP	17.3	2.4	4.9	0.05	0.05	0.03	-	-	0.21	-	0.03	0.01	0.00	-	-	0.00	-	-	-
71	WHITE SUCKER	12.8	0.8	1.0	0.11	0.07	0.06	-	-	0.54	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	WHITE SUCKER	12.3	0.8	2.5	0.04	0.03	0.02	-	-	0.17	-	0.01	0.01	0.00	-	-	0.00	-	-	-
72	CARP	17.0	2.4	2.3	0.26	0.08	0.00	-	-	1.40	-	0.03	0.00	0.00	-	-	0.00	-	-	-
72	CARP	2.4	3.3	3.3	0.21	0.01	0.00	-	-	0.90	-	0.04	0.00	0.00	-	-	0.00	-	-	-
72	GREEN SUNFISH	5.2	0.1	2.8	0.10	0.04	0.01	-	-	0.60	-	0.04	0.00	0.00	-	-	0.00	-	-	-
72	WHITE SUCKER	10.6	0.5	1.0	0.06	0.01	0.00	-	-	0.40	-	0.01	0.00	0.00	-	-	0.00	-	-	-
73	CARP	14.0	1.5	5.4	0.06	0.02	0.00	0.0	-	0.00	0.2	0.03	0.00	0.00	-	-	0.00	-	-	-
73	CARP	13.3	1.4	4.4	0.04	0.00	0.00	0.0	-	0.50	0.0	0.04	0.00	0.00	-	-	0.00	-	-	-
73	GREEN SUNFISH	3.3	0.1	2.5	0.07	0.02	0.00	0.0	-	0.00	0.2	0.03	0.00	0.00	-	-	0.00	-	-	-
73	WHITE SUCKER	7.5	0.3	2.4	0.07	0.02	0.00	0.0	-	0.00	0.3	0.03	0.00	0.00	-	-	0.00	-	-	-

STATION 87, NORTH PLATTE RIVER AT LAKE MCCONAUGHY, NE

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	CARP	15.8	1.2	8.8	0.47	0.12	0.03	-	-	0.24	-	0.02	0.01	0.00	-	-	-	-	0.01	-
70	CARP	15.9	1.2	14.9	0.35	0.12	0.05	-	-	0.24	-	0.02	0.02	0.00	-	-	-	-	0.01	-
70	CHANNEL CATFISH	16.5	1.0	14.4	0.43	0.19	0.05	-	-	0.21	-	0.04	0.01	0.00	-	-	-	-	0.04	-
70	RAINBOW TROUT	19.6	3.2	11.3	0.14	0.05	0.03	-	-	0.08	-	0.02	0.00	0.00	-	-	-	-	0.01	-
70	WALLEYE	16.2	1.8	8.2	0.14	0.12	0.05	-	-	0.33	-	0.02	0.01	0.00	-	-	-	-	0.05	-
71	CARP	14.9	2.1	7.3	0.29	0.07	0.02	-	-	0.06	-	0.02	0.01	0.00	-	-	0.01	-	-	-
71	CARP	16.4	2.1	9.5	0.28	0.07	0.02	-	-	0.06	-	0.02	0.01	0.00	-	-	0.01	-	-	-
71	CHANNEL CATFISH	17.4	1.8	11.7	0.51	0.13	0.05	-	-	0.08	-	0.06	0.02	0.00	-	-	0.01	-	-	-
71	CHANNEL CATFISH	19.8	2.4	11.1	0.52	0.11	0.07	-	-	0.10	-	0.05	0.01	0.00	-	-	0.01	-	-	-
71	WALLEYE	16.5	1.9	9.1	0.15	0.04	0.03	-	-	0.13	-	0.02	0.01	0.00	-	-	0.01	-	-	-
71	WALLEYE	15.9	1.6	8.0	0.10	0.02	0.02	-	-	0.06	-	0.01	0.01	0.00	-	-	0.01	-	-	-
72	CARP	18.1	2.9	4.4	0.64	0.08	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	CARP	18.8	3.1	3.7	1.10	0.13	0.00	-	-	0.00	-	0.05	0.00	0.00	-	-	0.00	-	-	-
72	CHANNEL CATFISH	16.6	1.6	7.9	0.11	0.09	0.00	-	-	0.00	-	0.07	0.00	0.00	-	-	0.00	-	-	-
72	WALLEYE	15.6	1.5	4.8	0.22	0.02	0.00	-	-	0.00	-	0.02	0.00	0.00	-	-	0.00	-	-	-
73	CARP	18.1	2.8	4.5	0.53	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	17.2	2.3	3.4	0.55	0.06	0.00	0.0	-	0.00	0.0	0.02	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	15.0	1.3	11.2	0.47	0.03	0.00	0.0	-	0.00	0.0	0.06	0.00	0.00	-	-	0.00	-	-	-
73	WALLEYE	16.3	1.2	6.1	0.10	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CARP	18.6	2.8	8.1	0.94	0.11	0.00	0.0	-	0.36	0.0	0.02	0.00	0.00	-	-	0.00	-	-	-
74	CARP	18.2	2.9	7.6	0.58	0.05	0.00	0.0	-	0.48	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	19.8	2.6	7.3	0.49	0.09	0.08	0.0	-	0.51	0.0	0.04	0.00	0.00	-	-	0.00	-	-	-
74	WALLEYE	14.0	1.0	6.2	0.20	0.00	0.00	0.0	-	0.08	0.0	0.02	0.00	0.00	-	-	0.00	-	-	-

STATION 86, JAMES RIVER AT OLIVET, SD

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	CARP	15.8	1.0	3.1	0.04	0.04	0.02	-	-	0.21	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	CARP	15.3	0.9	3.6	0.08	0.04	0.02	-	-	0.20	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	FRESHWATER DRUM	9.0	0.3	4.0	0.01	0.02	0.02	-	-	0.15	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	GOLDEYE	11.0	0.8	8.7	0.14	0.12	0.10	-	-	0.79	-	0.02	0.00	0.00	-	-	-	-	0.01	-
71	CARP	16.3	2.7	8.1	0.07	0.07	0.02	-	-	0.12	-	0.03	0.01	0.00	-	-	0.00	-	-	-
71	CARP	16.0	2.6	9.0	0.09	0.06	0.02	-	-	0.11	-	0.03	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	13.5	1.0	6.2	0.06	0.05	0.03	-	-	0.22	-	0.02	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	14.5	1.2	2.3	0.06	0.04	0.03	-	-	0.18	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	GOLDEYE	13.2	0.9	8.7	0.16	0.17	0.13	-	-	1.19	-	0.04	0.01	0.00	-	-	0.00	-	-	-
71	GOLDEYE	13.2	0.8	7.3	0.19	0.24	0.12	-	-	1.10	-	0.03	0.01	0.00	-	-	0.00	-	-	-
72	CARP	17.4	2.5	8.1	0.04	0.04	0.00	-	-	0.00	-	0.06	0.00	0.02	-	-	0.00	-	-	-
72	CHANNEL CATFISH	16.4	1.7	8.6	0.19	0.16	0.00	-	-	1.20	-	0.29	0.00	0.05	-	-	0.00	-	-	-
72	GOLDEYE	15.7	1.0	8.5	0.10	0.05	0.00	-	-	3.90	-	0.34	0.00	0.04	-	-	0.00	-	-	-
72	GOLDEYE	13.7	1.2	7.5	0.10	0.32	0.02	-	-	6.40	-	0.37	0.00	0.10	-	-	0.00	-	-	-
73	CARP	10.6	0.7	1.9	0.05	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	14.8	0.8	3.4	0.05	0.00	0.00	0.0	-	0.10	0.0	0.02	0.00	0.00	-	-	0.00	-	-	-
73	GOLDEYE	13.6	1.0	7.8	0.08	0.00	0.00	0.0	-	1.60	0.0	0.02	0.00	0.00	-	-	0.00	-	-	-
73	GOLDEYE	13.6	0.9	5.9	0.17	0.00	0.00	0.0	-	3.20	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	7.6	0.13	0.28	0.03	0.0	0.3	1.00	0.8	0.02	0.00	0.00	0.00	-	0.00	0.00	0.04	0.00
74	CARP	15.0	1.5	3.0	0.02	0.00	0.00	0.0	-	0.09	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	14.4	0.9	5.0	0.06	0.00	0.00	0.0	-	0.33	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	FRESHWATER DRUM	9.4	0.4	5.8	0.01	0.06	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	GOLDEYE	13.3	0.8	6.6	0.05	0.00	0.00	0.0	-	0.20	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	GOLDEYE	13.6	0.8	8.1	0.30	0.14	0.00	0.0	-	6.30	0.0	0.08	0.00	0.00	-	-	0.00	-	-	-

STATION 32, MISSOURI RIVER AT GARRISON DAM, ND

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
70	CARP	17.2	2.2	6.0	0.05	0.02	0.02	-	-	0.08	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	GOLDEYE	12.4	0.5	8.6	0.03	0.02	0.05	-	-	0.18	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	GOLDEYE	11.9	0.5	10.5	0.02	0.02	0.04	-	-	0.12	-	0.01	0.00	0.00	-	-	-	-	0.02	-
70	WALLEYE	15.8	1.3	6.0	0.02	0.02	0.04	-	-	0.14	-	0.01	0.00	0.00	-	-	-	-	0.01	-
71	GOLDEYE	12.5	0.5	13.4	0.02	0.02	0.02	-	-	0.08	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	GOLDEYE	12.2	0.4	12.4	0.01	0.01	0.02	-	-	0.06	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	WALLEYE	16.3	2.1	7.2	0.05	0.03	0.03	-	-	0.09	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	WALLEYE	18.3	2.2	7.3	0.03	0.02	0.31	-	-	0.07	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	WHITE SUCKER	13.2	0.8	0.6	0.01	0.01	0.01	-	-	0.08	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	WHITE SUCKER	13.5	0.8	1.0	0.01	0.01	0.01	-	-	0.04	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	CARP	18.1	2.6	9.0	0.11	0.00	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	GOLDEYE	12.5	0.8	12.5	0.02	0.00	0.02	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	GOLDEYE	13.0	0.8	14.4	0.03	0.05	0.00	-	-	0.00	-	0.05	0.00	0.00	-	-	0.00	-	-	-
72	WALLEYE	16.9	1.6	3.4	0.30	0.00	0.00	-	-	0.00	-	0.03	0.00	0.00	-	-	0.00	-	-	-
73	CARP	15.2	1.7	8.1	0.00	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	GOLDEYE	12.8	0.8	16.9	0.00	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	GOLDEYE	12.6	0.8	16.8	0.00	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	WALLEYE	16.3	1.4	5.8	0.02	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	GOLDEYE	10.5	0.4	13.4	0.03	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	GOLDEYE	11.3	0.4	10.3	0.03	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	WALLEYE	11.3	0.5	5.9	0.02	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	WHITE SUCKER	12.6	0.8	1.2	0.01	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 85, YELLOWSTONE RIVER AT SIDNEY, MT

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
70	CARPSUCKER	11.9	1.0	7.9	0.02	0.02	0.03	-	-	0.09	-	0.01	0.01	0.00	-	-	-	-	0.01	-
70	CHANNEL CATFISH	9.1	0.4	6.2	0.05	0.03	0.02	-	-	0.14	-	0.02	0.00	0.00	-	-	-	-	0.01	-
70	GOLDEYE	11.3	0.5	15.3	0.03	0.03	0.03	-	-	0.14	-	0.02	0.01	0.00	-	-	-	-	0.01	-
70	GOLDEYE	10.3	0.4	10.2	0.04	0.02	0.03	-	-	0.09	-	0.01	0.00	0.00	-	-	-	-	0.01	-
71	CARPSUCKER	13.2	1.7	12.2	0.02	0.03	0.03	-	-	0.10	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	CARPSUCKER	11.8	1.2	9.8	0.01	0.01	0.01	-	-	0.05	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	GOLDEYE	10.8	0.6	22.0	0.01	0.02	0.01	-	-	0.03	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	GOLDEYE	10.9	0.6	17.8	0.02	0.02	0.02	-	-	0.06	-	0.02	0.01	0.00	-	-	0.00	-	-	-
71	WALLEYE	13.4	1.2	6.9	0.05	0.02	0.01	-	-	0.07	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	WALLEYE	12.5	0.6	1.8	0.01	0.01	0.01	-	-	0.05	-	0.01	0.01	0.00	-	-	0.00	-	-	-
72	CARP	15.6	2.1	2.6	0.06	0.00	0.00	-	-	0.10	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	GOLDEYE	12.3	0.7	11.4	0.02	0.02	0.02	-	-	0.00	-	0.02	0.00	0.00	-	-	0.00	-	-	-
72	GOLDEYE	11.6	0.6	12.9	0.03	0.02	0.01	-	-	0.00	-	0.02	0.00	0.00	-	-	0.00	-	-	-
72	SAUGER	10.5	0.4	2.2	0.01	0.01	0.00	-	-	0.10	-	0.01	0.00	0.00	-	-	0.00	-	-	-
73	CARP	12.7	0.9	1.0	0.01	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	16.7	0.4	10.1	0.03	0.00	0.00	0.0	-	0.20	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	GOLDEYE	11.3	0.5	19.7	0.01	0.00	0.00	0.0	-	0.00	0.0	0.03	0.00	0.00	-	-	0.00	-	-	-
73	GOLDEYE	10.7	0.4	12.7	0.01	0.00	0.00	0.0	-	0.00	0.0	0.03	0.00	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	17.5	1.7	14.7	0.16	0.09	0.05	0.0	-	0.67	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	GOLDEYE	9.7	0.4	13.8	0.03	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	GOLDEYE	9.1	0.3	12.9	0.02	0.02	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	SAUGER	12.7	0.6	1.4	0.26	0.22	0.18	0.0	-	3.00	0.0	0.16	0.00	0.00	-	-	0.00	-	-	-

STATION 84, BIG HORN RIVER AT HARDIN, MT

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
70	CARP	15.5	2.4	9.3	0.10	0.06	0.05	-	-	0.42	-	0.02	0.00	0.00	-	-	-	-	0.01	-
70	CHANNEL CATFISH	19.1	3.7	14.4	0.17	0.10	0.08	-	-	0.55	-	0.03	0.01	0.00	-	-	-	-	0.02	-
70	GOLDEYE	10.6	0.4	3.8	0.15	0.05	0.06	-	-	0.44	-	0.01	0.01	0.00	-	-	-	-	0.01	-
70	GOLDEYE	10.9	0.5	5.4	0.05	0.05	0.05	-	-	0.27	-	0.02	0.00	0.00	-	-	-	-	0.01	-
71	CARP	15.3	2.4	7.0	0.04	0.01	0.01	-	-	0.05	-	0.02	0.01	0.00	-	-	0.01	-	-	-
71	CARP	15.8	2.7	9.9	0.04	0.02	0.01	-	-	0.06	-	0.02	0.01	0.00	-	-	0.01	-	-	-
71	CARPSUCKER	12.0	1.1	7.4	0.05	0.04	0.06	-	-	0.32	-	0.01	0.00	0.00	-	-	0.01	-	-	-
71	GOLDEYE	11.0	0.6	9.5	0.08	0.04	0.04	-	-	0.24	-	0.01	0.01	0.00	-	-	0.01	-	-	-
71	GOLDEYE	10.8	0.5	4.3	0.07	0.04	0.04	-	-	0.38	-	0.01	0.00	0.00	-	-	0.01	-	-	-
72	CARP	17.2	2.7	5.8	0.05	0.00	0.00	-	-	0.00	-	0.04	0.00	0.00	-	-	0.00	-	-	-
72	GOLDEYE	12.5	0.6	11.3	0.03	0.00	0.00	-	-	0.60	-	0.06	0.00	0.00	-	-	0.00	-	-	-
72	GOLDEYE	12.5	0.7	9.0	0.04	0.00	0.00	-	-	0.20	-	0.03	0.00	0.00	-	-	0.00	-	-	-
73	CARP	16.9	2.7	7.1	0.06	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	22.5	4.5	15.6	0.16	0.00	0.16	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	GOLDEYE	12.6	0.7	10.8	0.03	0.00	0.01	0.0	-	0.10	0.0	0.01	0.00	0.00	-	-	0.00	-	-	-
73	GOLDEYE	12.8	0.7	10.2	0.04	0.00	0.01	0.0	-	0.10	0.0	0.03	0.00	0.00	-	-	0.00	-	-	-

STATION 33, MISSOURI RIVER AT GREAT FALLS, MT

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	GOLDEYE	11.2	0.5	4.4	0.08	0.06	0.09	-	-	0.46	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	GOLDEYE	11.2	0.5	9.4	0.02	0.02	0.03	-	-	0.11	-	0.01	0.00	0.00	-	-	-	-	0.02	-
70	REDHORSE	15.9	1.7	13.5	0.26	0.29	0.38	-	-	2.81	-	0.02	0.00	0.00	-	-	-	-	0.07	-
70	SAUGER	12.5	0.7	4.8	0.26	0.21	0.23	-	-	2.03	-	0.01	0.00	0.00	-	-	-	-	0.09	-
71	GOLDEYE	11.8	0.6	6.1	0.30	0.05	0.34	-	-	0.27	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	GOLDEYE	11.8	0.6	8.8	0.04	0.05	0.06	-	-	0.15	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	REDHORSE	17.2	2.2	14.3	0.12	0.26	0.30	-	-	1.41	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	REDHORSE	17.5	2.3	13.2	0.21	0.25	0.31	-	-	1.35	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	SAUGER	10.8	0.4	3.1	0.10	0.06	0.06	-	-	0.48	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	SAUGER	9.9	0.3	1.2	0.05	0.04	0.05	-	-	0.35	-	0.01	0.01	0.00	-	-	0.00	-	-	-
72	GOLDEYE	12.7	0.6	5.2	0.07	0.02	0.07	-	-	0.32	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	GOLDEYE	12.3	0.6	6.9	0.04	0.05	0.08	-	-	0.54	-	0.02	0.00	0.00	-	-	0.00	-	-	-
72	REDHORSE	16.5	1.9	7.2	0.29	0.13	0.24	-	-	3.70	-	0.03	0.00	0.00	-	-	0.00	-	-	-
72	SAUGER	17.1	2.0	6.1	0.16	0.07	0.15	-	-	2.80	-	0.02	0.00	0.00	-	-	0.00	-	-	-
73	GOLDEYE	12.5	0.6	4.0	0.07	0.00	0.00	0.0	-	0.00	1.3	0.00	0.00	0.00	-	-	0.00	-	-	-
73	GOLDEYE	12.8	0.7	9.2	0.08	0.03	0.00	0.0	-	0.00	0.4	0.03	0.00	0.00	-	-	0.00	-	-	-
73	LONGNOSE SUCKER	15.6	1.7	9.5	0.08	0.07	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

HUDSON BAY DRAINAGE

STATION 34, RED RIVER OF THE NORTH AT NOYES, MN/ND

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	CHANNEL CATFISH	15.6	0.7	5.1	0.36	0.28	0.33	-	-	0.68	-	0.15	0.00	0.00	-	-	-	-	0.07	-
70	GOLDEYE	12.3	0.6	16.6	0.39	0.14	0.13	-	-	0.51	-	0.19	0.00	0.00	-	-	-	-	0.07	-
70	GOLDEYE	12.4	0.7	16.2	0.32	0.16	0.17	-	-	0.34	-	0.05	0.00	0.00	-	-	-	-	0.08	-
70	SAUGER	12.2	0.5	2.7	0.26	0.12	0.16	-	-	0.40	-	0.04	0.00	0.00	-	-	-	-	0.10	-
71	CHANNEL CATFISH	16.0	1.9	13.8	0.36	0.28	0.41	-	-	2.29	-	0.06	0.01	0.00	-	-	0.00	-	-	-
71	GOLDEYE	13.6	0.8	15.4	0.33	0.21	0.19	-	-	3.98	-	0.03	0.00	0.00	-	-	0.00	-	-	-
71	GOLDEYE	13.0	0.8	16.0	0.22	0.15	0.12	-	-	3.65	-	0.04	0.01	0.00	-	-	0.00	-	-	-
71	SAUGER	11.6	0.4	2.4	0.13	0.06	0.07	-	-	0.65	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	SAUGER	11.0	0.3	3.2	0.09	0.05	0.04	-	-	0.69	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	CHANNEL CATFISH	19.3	2.9	13.0	0.52	0.00	0.00	-	-	1.70	-	0.07	0.00	0.00	-	-	0.00	-	-	-
72	REDHORSE	17.6	1.9	5.9	0.70	0.00	0.00	-	-	1.50	-	0.07	0.00	0.00	-	-	0.00	-	-	-
72	SAUGER	14.8	0.9	4.0	0.34	0.28	0.00	-	-	0.70	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	SAUGER	12.2	0.4	3.6	0.22	0.00	0.00	-	-	2.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	16.0	1.5	17.5	0.08	0.12	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	GOLDEYE	12.6	0.7	16.5	0.11	0.00	0.00	1.4	-	0.00	0.3	0.00	0.00	0.00	-	-	0.00	-	-	-
73	SAUGER	12.0	0.5	7.9	0.07	0.11	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	SAUGER	11.8	0.5	7.6	0.07	0.10	0.00	0.3	-	0.00	0.4	0.00	0.00	0.00	-	-	0.00	-	-	-
74	GOLDEYE	12.6	0.7	11.6	0.33	0.12	0.07	0.0	-	1.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	SAUGER	12.3	0.5	6.0	0.24	0.15	0.00	0.0	-	0.92	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	SAUGER	12.3	0.5	8.1	0.27	0.29	0.00	0.0	-	2.60	0.0	0.08	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	6.6	0.12	0.00	0.05	0.0	0.0	0.76	0.4	0.02	0.01	0.01	0.03	0.02	0.00	0.00	0.02	0.01
74	WHITE SUCKER	14.5	1.4	6.1	0.07	0.06	0.00	0.0	-	0.23	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 94, GILA RIVER AT SAN CARLOS RESERVOIR, AZ

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES			PCB'S (AROCLOR MIXTURES)				CYCLODIENE INSECTICIDES					OTHER COMPOUNDS			
					DDE	DDD	DDT	1242	1248	1254	1260	DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	TOXAPHENE	HCB	A-BHC	G-BHC
70	BLUEGILL	4.7	0.1	2.3	0.15	0.02	0.02	-	-	0.05	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	CARP	14.5	1.1	1.8	0.16	0.02	0.01	-	-	0.04	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	LARGEMOUTH BASS	13.1	1.2	6.5	0.17	0.04	0.04	-	-	0.08	-	0.01	0.00	0.00	-	-	-	-	0.01	-
71	CARP	12.8	0.9	2.1	0.11	0.02	0.02	-	-	0.07	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	CARP	11.7	0.7	3.9	0.10	0.03	0.02	-	-	0.10	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	9.2	0.2	4.1	0.12	0.04	0.04	-	-	0.19	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	12.6	0.5	3.1	0.15	0.05	0.05	-	-	0.23	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	14.4	1.4	3.8	0.14	0.03	0.03	-	-	0.03	-	0.01	0.01	0.00	-	-	0.00	-	-	-
72	CARP	13.0	0.9	5.2	0.19	0.00	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	CARP	11.9	0.7	3.1	0.26	0.04	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	CHANNEL CATFISH	13.5	0.7	3.5	0.16	0.00	0.02	-	-	0.00	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	14.8	2.1	4.9	0.30	0.04	0.04	-	-	0.00	-	0.01	0.00	0.00	-	-	0.00	-	-	-
73	BLUEGILL	6.2	0.2	1.5	0.04	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	12.8	1.0	9.5	0.16	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	12.9	1.3	6.5	0.11	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	12.6	1.1	7.8	0.09	0.00	0.02	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 36, COLORADO RIVER AT IMPERIAL RESERVOIR, AZ/CA

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES			PCB'S (AROCLOR MIXTURES)				CYCLODIENE INSECTICIDES					OTHER COMPOUNDS			
					DDE	DDD	DDT	1242	1248	1254	1260	DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	TOXAPHENE	HCB	A-BHC	G-BHC
70	CARP	16.4	3.9	5.2	0.14	0.05	0.03	-	-	0.14	-	0.01	0.01	0.00	-	-	-	-	0.01	-
70	CARP	14.8	2.5	5.0	0.11	0.05	0.03	-	-	0.13	-	0.01	0.01	0.00	-	-	-	-	0.01	-
70	CHANNEL CATFISH	12.3	0.9	4.8	0.13	0.05	0.06	-	-	0.17	-	0.01	0.01	0.00	-	-	-	-	0.07	-
70	LARGEMOUTH BASS	14.5	0.9	1.1	0.12	0.04	0.04	-	-	0.11	-	0.01	0.00	0.00	-	-	-	-	0.01	-
71	CARP	15.9	2.3	2.8	0.05	0.02	0.01	-	-	0.03	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	8.7	0.4	1.4	1.05	0.02	0.02	-	-	0.02	-	0.02	0.00	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	10.2	0.5	5.4	0.13	0.09	0.05	-	-	0.33	-	0.12	0.00	0.00	-	-	0.01	-	-	-
71	REDEAR SUNFISH	7.6	0.3	2.1	1.01	0.01	0.01	-	-	0.03	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	REDEAR SUNFISH	7.7	0.3	2.3	0.02	0.02	0.02	-	-	0.07	-	0.02	0.00	0.00	-	-	0.00	-	-	-
72	BLUEGILL	6.1	0.2	2.0	0.11	0.01	0.02	-	-	0.00	-	0.03	0.00	0.00	-	-	0.00	-	-	-
72	CARP	17.9	3.0	4.0	0.23	0.02	0.01	-	-	0.00	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	CARP	17.7	2.9	5.1	0.25	0.04	0.01	-	-	0.01	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	9.6	0.5	1.7	0.10	0.02	0.03	-	-	0.00	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	CROSSCHECK	-	-	1.8	0.07	0.02	0.03	-	0.0	0.00	0.0	0.00	0.00	0.00	0.00	-	0.00	0.00	-	-
73	BLUEGILL	5.8	0.2	2.5	0.12	0.00	0.03	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	BLUEGILL	5.9	0.2	1.2	0.03	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	18.1	2.8	4.5	0.25	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	11.3	0.9	3.4	0.15	0.00	0.04	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	BLUEGILL	5.8	0.2	2.5	0.06	0.01	0.03	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	BLUEGILL	6.3	0.2	2.0	0.06	0.01	0.02	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CARP	12.7	1.2	5.8	0.11	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	LARGEMOUTH BASS	7.7	0.3	1.8	0.06	0.01	0.02	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 91, COLORADO RIVER AT LAKE HAVASU, AZ/CA

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
70	CARP	14.1	1.4	5.3	0.18	0.04	0.03	-	-	0.14	-	0.01	0.01	0.00	-	-	-	-	0.01	-
70	CARP	14.1	1.4	5.0	0.10	0.04	0.03	-	-	0.20	-	0.01	0.01	0.00	-	-	-	-	0.01	-
70	CHANNEL CATFISH	10.6	0.7	5.8	0.11	0.05	0.03	-	-	0.21	-	0.01	0.01	0.00	-	-	-	-	0.01	-
70	LARGEMOUTH BASS	13.1	0.7	1.9	0.10	0.04	0.04	-	-	0.14	-	0.01	0.01	0.00	-	-	-	-	0.01	-
71	BLACK CRAPPIE	7.8	0.3	2.8	0.04	0.01	0.01	-	-	0.05	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	BLACK CRAPPIE	8.6	0.4	2.2	0.04	0.02	0.02	-	-	0.04	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	CARP	13.7	1.5	2.0	0.10	0.02	0.01	-	-	0.06	-	0.03	0.01	0.00	-	-	0.00	-	-	-
71	CARP	14.1	1.3	5.4	0.15	0.03	0.02	-	-	0.05	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	16.5	1.4	9.7	0.14	0.04	0.02	-	-	0.12	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	15.8	1.2	9.2	0.36	0.05	0.04	-	-	0.16	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	CARP	12.5	1.0	1.7	0.10	0.00	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	CARP	13.9	1.5	1.9	0.09	0.00	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	11.4	1.0	2.3	0.29	0.01	0.03	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	YELLOW BULLHEAD	8.9	0.4	1.4	0.06	0.00	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	BLACK CRAPPIE	12.9	1.3	2.9	0.06	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	17.4	3.1	3.2	0.16	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	9.8	0.5	2.8	0.13	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CARP	15.6	1.9	1.2	0.11	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CARP	17.1	2.5	3.6	0.10	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	22.1	3.4	10.9	0.47	0.10	0.00	0.0	-	0.24	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	LARGEMOUTH BASS	9.5	0.5	4.0	0.14	0.02	0.03	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 92, COLORADO RIVER AT LAKE MEAD, NV/AZ

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
70	CARP	15.8	2.8	7.5	0.08	0.02	0.01	-	-	0.08	-	0.01	0.01	0.00	-	-	-	-	0.01	-
70	CARP	16.1	3.0	10.8	0.10	0.05	0.03	-	-	0.18	-	0.01	0.01	0.00	-	-	-	-	0.25	-
70	LARGEMOUTH BASS	14.7	2.0	3.8	0.06	0.02	0.04	-	-	0.09	-	0.01	0.01	0.00	-	-	-	-	0.01	-
71	CARP	18.0	2.8	9.6	0.11	0.13	0.14	-	-	1.68	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	14.9	1.1	6.8	0.11	0.04	0.04	-	-	0.18	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	13.9	0.8	6.6	0.08	0.03	0.04	-	-	0.13	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	13.1	1.5	6.6	0.04	0.03	0.02	-	-	0.10	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	11.3	0.4	4.1	0.04	0.02	0.03	-	-	0.09	-	0.01	0.01	0.00	-	-	0.00	-	-	-
72	CARP	15.4	1.6	6.6	0.09	0.00	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	CHANNEL CATFISH	14.6	0.7	5.6	0.13	0.04	0.00	-	-	0.71	-	0.00	0.01	0.00	-	-	0.00	-	-	-
72	CROSSCHECK	-	-	8.5	0.20	0.07	0.05	-	0.0	0.30	0.0	0.01	0.01	0.00	0.00	-	0.00	0.00	-	-
72	CHANNEL CATFISH	14.5	0.6	5.9	0.19	0.00	0.00	-	-	0.81	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	12.4	1.0	4.0	0.06	0.03	0.08	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	16.8	2.4	14.1	0.07	0.00	0.00	0.0	-	0.20	0.0	0.02	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	15.9	1.2	6.6	0.13	0.00	0.00	0.0	-	0.20	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	12.6	1.1	8.0	0.04	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	12.0	1.0	5.4	0.04	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 93, COLORADO RIVER AT LAKE POWELL,PAGE, AZ

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
70	CARP	12.7	0.5	0.9	0.06	0.01	0.01	-	-	0.09	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	LARGEMOUTH BASS	13.9	1.2	6.2	0.05	0.02	0.02	-	-	0.11	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	LARGEMOUTH BASS	13.0	0.9	5.3	0.04	0.02	0.02	-	-	0.08	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	RAINBOW TROUT	13.4	1.1	7.5	0.02	0.01	0.01	-	-	0.08	-	0.01	0.00	0.00	-	-	-	-	0.01	-
71	CARP	13.2	0.9	0.9	0.03	0.01	0.01	-	-	0.08	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	CARP	13.0	0.8	0.9	0.03	0.01	0.01	-	-	0.05	-	0.00	0.00	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	13.3	1.4	6.5	0.01	0.01	0.01	-	-	0.03	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	15.2	2.3	8.5	0.03	0.02	0.03	-	-	0.17	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	RAINBOW TROUT	21.1	4.9	9.0	0.03	0.02	0.02	-	-	0.07	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	RAINBOW TROUT	19.4	3.7	11.3	0.03	0.02	0.02	-	-	0.07	-	0.01	0.01	0.00	-	-	0.00	-	-	-
72	CARP	14.2	1.1	1.2	0.04	0.00	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	CARP	13.4	0.9	1.9	0.06	0.00	0.00	-	-	0.10	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	15.5	2.3	7.5	0.07	0.02	0.03	-	-	0.16	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	RAINBOW TROUT	17.4	2.2	9.9	0.03	0.01	0.03	-	-	0.00	-	0.01	0.00	0.00	-	-	0.00	-	-	-
73	CARP	13.6	1.1	3.4	0.03	0.00	0.01	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	13.8	1.1	2.5	0.03	0.00	0.00	0.0	-	0.00	0.0	0.01	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	14.7	2.3	7.3	0.03	0.00	0.03	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	RAINBOW TROUT	16.7	2.3	9.0	0.02	0.00	0.04	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CARP	14.5	1.2	2.5	0.03	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	LARGEMOUTH BASS	12.9	1.3	6.4	0.41	0.40	0.00	0.0	-	0.10	0.0	0.00	0.00	0.00	-	-	3.00	-	-	-
74	LARGEMOUTH BASS	12.9	1.2	7.2	0.03	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	RAINBOW TROUT	16.4	2.0	12.2	0.04	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 35, GREEN RIVER AT VERNAL, UT

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
70	CARP	10.8	0.6	3.4	0.04	0.02	0.01	-	-	0.09	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	CHANNEL CATFISH	9.2	0.3	1.8	0.09	0.02	0.01	-	-	0.10	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	FLANNELMOUTH SUCKE	16.7	1.4	5.0	0.07	0.03	0.04	-	-	0.10	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	FLANNELMOUTH SUCKE	16.6	1.5	4.5	0.08	0.04	0.04	-	-	0.16	-	0.01	0.00	0.00	-	-	-	-	0.01	-
71	CARP	13.7	1.5	5.2	0.01	0.01	0.01	-	-	0.08	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	CARP	15.2	2.0	4.6	0.01	0.01	0.01	-	-	0.05	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	8.3	0.2	7.5	0.02	0.02	0.02	-	-	0.12	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	8.6	0.2	7.0	0.02	0.03	0.05	-	-	0.30	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	FLANNELMOUTH SUCKE	16.4	1.4	5.5	0.02	0.01	0.01	-	-	0.03	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	FLANNELMOUTH SUCKE	16.1	1.4	7.1	0.04	0.03	0.04	-	-	0.24	-	0.01	0.01	0.00	-	-	0.00	-	-	-
72	CARP	15.2	2.1	4.9	0.12	0.00	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	CHANNEL CATFISH	10.8	0.3	5.5	0.11	0.00	0.02	-	-	0.00	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	FLANNELMOUTH SUCKE	12.7	1.5	3.7	0.07	0.00	0.00	-	-	0.00	-	0.03	0.00	0.00	-	-	0.00	-	-	-
72	FLANNELMOUTH SUCKE	17.5	1.9	4.5	0.05	0.00	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	15.9	2.2	2.4	0.03	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	11.6	0.5	8.0	0.05	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	11.9	0.4	4.9	0.03	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	FLANNELMOUTH SUCKE	17.8	1.9	10.2	0.09	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CARP	16.5	2.6	4.4	0.04	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	10.6	0.3	7.7	0.01	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	11.1	0.4	3.6	0.05	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	FLANNELMOUTH SUCKE	17.1	1.7	7.5	0.03	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 37, TRUCKEE RIVER AT FERNLEY, NV

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
70	BROWN BULLHEAD	10.1	0.6	2.8	0.06	0.05	0.03	-	-	0.24	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	CARP	13.2	1.1	6.4	0.13	0.12	0.06	-	-	0.53	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	CARP	12.7	1.1	5.4	0.11	0.11	0.06	-	-	0.50	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	LARGEMOUTH BASS	11.5	1.1	7.3	0.13	0.15	0.08	-	-	0.73	-	0.03	0.00	0.00	-	-	-	-	0.02	-
71	BROWN BULLHEAD	8.9	0.4	2.2	0.09	0.15	0.05	-	-	0.83	-	0.01	0.00	0.00	-	-	0.01	-	-	-
71	BROWN BULLHEAD	9.0	0.4	1.6	0.07	0.09	0.03	-	-	0.21	-	0.00	0.00	0.00	-	-	0.01	-	-	-
71	CARP	15.5	1.7	3.8	0.47	0.42	0.15	-	-	1.46	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	CARP	14.5	1.5	1.8	0.12	0.33	0.10	-	-	0.96	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	10.7	0.8	5.5	0.25	0.45	0.80	-	-	0.50	-	0.02	0.00	0.00	-	-	0.01	-	-	-
71	LARGEMOUTH BASS	11.4	1.0	6.4	0.14	0.25	0.05	-	-	0.35	-	0.01	0.00	0.00	-	-	0.01	-	-	-
72	BROWN BULLHEAD	8.9	0.8	0.1	0.01	0.00	0.00	-	-	0.10	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	CARP	17.3	2.4	5.3	0.41	0.30	0.00	-	-	2.80	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	CARP	13.3	1.2	4.2	0.20	0.13	0.00	-	-	0.80	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	12.7	1.2	8.9	0.21	0.00	0.00	-	-	2.10	-	0.00	0.00	0.00	-	-	0.02	-	-	-
73	BROWN BULLHEAD	10.3	0.7	4.4	0.00	0.00	0.00	0.0	-	0.22	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	15.2	1.7	4.6	0.05	0.00	0.00	0.0	-	0.50	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	17.6	2.6	5.9	0.04	0.00	0.00	0.0	-	0.60	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	12.6	1.3	7.8	0.00	0.00	0.00	0.0	-	1.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	BROWN BULLHEAD	10.8	0.8	2.3	0.07	0.06	0.00	0.0	-	0.15	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	LARGESCALE SUCKER	13.5	1.1	9.0	0.10	0.15	0.00	0.0	-	0.44	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	LARGESCALE SUCKER	13.1	1.1	9.6	0.15	0.18	0.00	0.0	-	0.53	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	LARGEMOUTH BASS	16.4	2.9	6.9	0.41	0.46	0.12	0.0	-	0.81	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	6.2	0.18	0.32	0.08	0.0	0.0	1.22	0.5	0.04	0.01	0.00	0.34	0.06	0.00	0.00	0.01	0.00

STATION 38, UTAH LAKE AT PROVO, UT

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
70	BLACK BULLHEAD	10.2	0.6	4.7	0.05	0.06	0.02	-	-	0.13	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	BLACK BULLHEAD	9.9	0.6	4.4	0.05	0.04	0.02	-	-	0.12	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	CARP	16.7	2.4	8.7	0.06	0.05	0.02	-	-	0.18	-	0.01	0.00	0.00	-	-	-	-	0.02	-
70	WHITE BASS	10.4	0.5	1.9	0.04	0.04	0.02	-	-	0.12	-	0.01	0.00	0.00	-	-	-	-	0.01	-
71	BLACK BULLHEAD	10.1	0.6	4.9	0.03	0.15	0.26	-	-	1.98	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	BLACK BULLHEAD	10.9	0.7	4.6	0.03	0.06	0.07	-	-	0.42	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	CARP	15.2	1.8	8.0	0.04	0.05	0.01	-	-	0.08	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	CARP	13.5	1.3	4.1	0.02	0.02	0.02	-	-	0.13	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	WHITE BASS	8.9	0.3	4.2	0.02	0.03	0.02	-	-	0.09	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	WHITE BASS	8.4	0.3	4.2	0.02	0.06	0.04	-	-	0.27	-	0.01	0.01	0.00	-	-	0.00	-	-	-
72	BLACK BULLHEAD	9.7	0.5	3.0	0.03	0.03	0.00	-	-	0.12	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	BLACK BULLHEAD	10.7	0.8	2.2	0.04	0.03	0.00	-	-	0.23	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	CARP	17.1	1.9	6.5	0.09	0.00	0.01	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	WHITE BASS	10.3	0.4	1.9	0.03	0.04	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	BLACK BULLHEAD	11.1	0.7	3.8	0.06	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	BLACK BULLHEAD	11.3	0.7	2.4	0.03	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	17.9	2.6	10.8	0.12	0.00	0.00	0.0	-	0.26	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	WHITE BASS	10.4	0.4	4.3	0.03	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 95, BEAR RIVER AT PRESTON, ID

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES			PCB'S (AROCLOR MIXTURES)				CYCLODIENE INSECTICIDES					OTHER COMPOUNDS			
					DDE	DDD	DDT	1242	1248	1254	1260	DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	TOXAPHENE	HCB	A-BHC	G-BHC
70	CARP	18.6	3.8	6.5	0.12	0.12	0.09	-	-	0.89	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	LARGESCALE SUCKER	17.1	2.7	14.7	0.10	0.15	0.11	-	-	1.06	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	LARGESCALE SUCKER	16.1	1.9	8.5	0.06	0.11	0.07	-	-	0.70	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	YELLOW PERCH	7.9	0.3	3.9	0.07	0.17	0.13	-	-	1.29	-	0.01	0.00	0.00	-	-	-	-	0.01	-
71	CARP	14.3	2.1	6.2	0.05	0.12	0.10	-	-	0.77	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	CARP	14.4	2.3	6.0	0.05	0.12	0.11	-	-	0.87	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	LARGESCALE SUCKER	16.6	2.2	12.2	0.10	0.13	0.10	-	-	0.70	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	LARGESCALE SUCKER	17.5	2.4	7.1	0.10	0.15	0.10	-	-	0.90	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	YELLOW PERCH	8.0	0.3	3.5	0.03	0.09	0.08	-	-	0.44	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	YELLOW PERCH	8.1	0.3	3.9	0.02	0.06	0.06	-	-	0.40	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	CARP	17.6	4.1	11.6	0.00	0.00	0.00	-	-	1.90	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	LARGESCALE SUCKER	15.1	1.6	7.0	0.00	0.02	0.00	-	-	1.20	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	YELLOW PERCH	5.2	0.1	3.9	0.00	0.02	0.00	-	-	1.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	YELLOW PERCH	6.0	0.1	4.5	0.00	0.02	0.02	-	-	1.00	-	0.01	0.00	0.01	-	-	0.00	-	-	-
73	CARP	14.1	1.6	6.7	0.00	0.00	0.00	0.0	-	0.80	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGESCALE SUCKER	18.6	2.6	13.5	0.00	0.00	0.00	0.0	-	2.80	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	YELLOW PERCH	8.9	0.3	4.3	0.00	0.00	0.00	0.0	-	1.20	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	YELLOW PERCH	7.9	0.2	4.0	0.00	0.00	0.00	0.0	-	0.00	1.3	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 39, SACRAMENTO RIVER AT SACRAMENTO, CA

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
70	CARP	10.9	0.8	2.2	2.92	0.37	0.09	-	-	1.20	-	0.02	0.01	0.00	-	-	-	-	0.01	-
70	CARP	12.3	1.2	7.2	3.58	1.15	0.34	-	-	4.04	-	0.04	0.01	0.00	-	-	-	-	0.02	-
70	CROSSCHECK	-	-	7.6	1.44	1.12	0.01	-	2.5	2.00	1.1	0.09	0.01	0.00	-	-	0.00	-	-	-
70	LARGEMOUTH BASS	11.9	1.0	3.1	2.51	1.30	0.33	-	-	0.73	-	0.10	0.01	0.00	-	-	-	-	0.01	-
70	WHITE CATFISH	8.3	0.3	4.7	1.46	0.57	0.40	-	-	3.78	-	0.03	0.00	0.00	-	-	-	-	0.01	-
71	CARP	13.0	1.4	6.8	2.43	0.78	0.18	-	-	1.04	-	0.11	0.01	0.00	-	-	0.00	-	-	-
71	CROSSCHECK	-	-	10.0	6.44	1.72	0.22	-	0.5	3.00	1.7	0.13	0.02	0.00	0.42	-	0.00	0.01	-	-
71	CARP	12.7	1.3	9.5	3.26	0.81	0.16	-	-	1.04	-	0.10	0.01	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	12.5	1.3	5.2	0.86	0.43	0.19	-	-	0.39	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	LARGEMOUTH BASS	11.3	1.0	3.9	1.03	0.68	0.13	-	-	0.17	-	0.18	0.00	0.00	-	-	0.00	-	-	-
71	WHITE CATFISH	9.1	0.4	6.6	1.04	0.41	0.16	-	-	0.63	-	0.05	0.01	0.00	-	-	0.00	-	-	-
71	WHITE CATFISH	9.4	0.5	5.9	0.58	0.25	0.13	-	-	0.63	-	0.03	0.01	0.00	-	-	0.00	-	-	-
72	CARP	11.6	1.0	4.6	1.20	0.30	0.01	-	-	2.60	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	CROSSCHECK	-	-	4.6	1.67	0.34	0.03	-	0.0	1.20	0.6	0.03	0.00	0.00	0.09	-	0.00	0.00	-	-
72	CARP	11.5	1.0	6.4	2.00	0.60	0.01	-	-	6.10	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	LARGEMOUTH BASS	11.3	0.9	5.1	2.30	0.87	0.15	-	-	3.70	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	WHITE CATFISH	10.2	0.5	6.5	3.50	0.60	0.10	-	-	8.20	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	18.8	2.9	12.4	3.20	0.51	0.00	0.5	-	0.00	3.0	0.29	0.00	0.00	-	-	0.00	-	-	-
73	CARP	20.3	4.2	9.0	1.70	0.40	0.00	0.0	-	0.00	1.5	0.06	0.00	0.00	-	-	0.00	-	-	-
73	WHITE CATFISH	11.8	0.6	2.6	1.20	0.24	0.00	0.0	-	0.00	1.0	0.05	0.00	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	3.3	0.99	0.18	0.06	0.2	0.8	1.40	1.1	0.10	0.00	0.00	0.05	-	0.00	0.00	0.02	0.00
74	CARP	16.6	1.4	7.5	2.20	0.68	0.00	0.0	-	2.50	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	7.7	0.30	0.20	0.03	0.0	0.0	0.91	0.5	0.03	0.01	0.01	0.17	0.07	0.00	0.00	0.01	0.00
74	LARGEMOUTH BASS	11.7	0.9	5.7	1.10	0.43	0.09	0.0	-	0.56	0.0	0.13	0.00	0.00	-	-	0.00	-	-	-
74	LARGEMOUTH BASS	11.7	0.9	6.5	1.10	0.40	0.09	0.0	-	0.81	0.0	0.12	0.00	0.00	-	-	0.00	-	-	-
74	WHITE CATFISH	10.0	0.4	6.2	1.20	0.29	0.10	0.0	-	1.30	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 40, SAN JOAQUIN RIVER AT LOS BANOS, CA

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
70	BLACK CRAPPIE	11.6	1.2	9.5	0.70	0.84	0.44	-	-	0.60	-	0.35	0.00	0.00	-	-	-	-	0.02	-
70	CROSSCHECK	-	-	9.6	0.34	1.00	0.71	-	0.0	0.10	0.0	0.42	0.01	0.00	-	-	3.80	-	-	-
70	BLACK CRAPPIE	10.8	1.1	8.7	0.67	0.71	0.39	-	-	0.42	-	0.29	0.00	0.00	-	-	-	-	0.01	-
70	CARP	15.1	1.7	4.8	1.52	0.60	0.42	-	-	3.74	-	0.04	0.00	0.00	-	-	-	-	0.01	-
70	CHANNEL CATFISH	16.6	2.3	6.7	1.21	0.98	0.59	-	-	1.72	-	0.22	0.00	0.00	-	-	-	-	0.01	-
71	BLACK CRAPPIE	10.2	0.8	7.7	0.24	0.46	0.07	-	-	0.14	-	0.13	0.00	0.00	-	-	0.00	-	-	-
71	BLACK CRAPPIE	10.0	0.8	7.1	0.22	0.45	0.06	-	-	0.08	-	0.21	0.00	0.00	-	-	0.00	-	-	-
71	CROSSCHECK	-	-	7.7	0.27	0.35	0.09	-	0.0	0.50	0.3	0.18	0.00	0.00	0.00	-	0.00	0.00	-	-
71	CARP	12.9	1.4	2.3	0.62	0.21	0.04	-	-	0.17	-	0.04	0.00	0.00	-	-	0.00	-	-	-
71	CARP	11.9	1.4	2.6	0.14	0.11	0.02	-	-	0.07	-	0.02	0.00	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	15.6	2.4	7.7	0.41	0.59	0.21	-	-	0.18	-	0.00	0.00	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	14.2	2.1	8.3	0.72	0.91	0.39	-	-	0.24	-	0.20	0.00	0.00	-	-	0.00	-	-	-
72	BLACK CRAPPIE	11.0	0.9	6.3	0.39	0.33	0.01	-	-	1.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	CARP	11.6	1.0	2.8	0.18	0.10	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	CARP	12.0	1.2	2.9	0.25	0.20	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	SACRAMENTO BLACKFI	11.4	0.8	12.4	0.20	0.11	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	13.7	1.2	1.1	0.07	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	10.4	0.3	2.4	0.13	0.07	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	12.7	0.6	3.1	0.22	0.14	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	WHITE CATFISH	12.0	0.7	1.3	0.35	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 47, KLAMATH RIVER AT HORNBROOK, CA

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
70	KLAMATH SUCKER	15.7	2.1	6.1	0.05	0.03	0.03	-	-	0.12	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	LARGEMOUTH BASS	8.4	0.3	2.8	0.02	0.01	0.02	-	-	0.09	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	YELLOW PERCH	7.9	0.3	2.8	0.05	0.06	0.05	-	-	0.30	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	YELLOW PERCH	8.2	0.3	2.9	0.03	0.25	0.28	-	-	0.18	-	0.01	0.00	0.00	-	-	-	-	0.01	-
71	BROWN BULLHEAD	8.6	0.4	4.3	0.01	0.01	0.01	-	-	0.17	-	0.01	0.00	-	-	-	0.00	-	-	-
71	BROWN BULLHEAD	8.6	0.3	4.5	0.01	0.01	0.01	-	-	0.10	-	0.01	0.00	-	-	-	0.00	-	-	-
71	KLAMATH SUCKER	15.5	2.2	6.1	0.03	0.02	0.03	-	-	0.20	-	0.00	0.00	-	-	-	0.00	-	-	-
71	KLAMATH SUCKER	14.3	1.4	5.1	0.02	0.02	0.02	-	-	0.12	-	0.00	0.00	-	-	-	0.00	-	-	-
71	YELLOW PERCH	7.7	0.2	4.3	0.01	0.02	0.03	-	-	0.18	-	0.01	0.01	-	-	-	0.00	-	-	-
71	YELLOW PERCH	7.6	0.2	3.6	0.01	0.01	0.01	-	-	0.06	-	0.01	0.01	-	-	-	0.00	-	-	-
73	KLAMATH SUCKER	14.9	1.6	4.2	0.38	0.21	0.04	0.0	-	0.00	0.3	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	7.7	0.3	4.0	0.01	0.00	0.00	0.0	-	0.10	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	YELLOW PERCH	8.1	0.3	5.7	0.01	0.00	0.00	0.0	-	0.10	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	YELLOW PERCH	8.0	0.2	5.2	0.01	0.00	0.00	0.0	-	0.10	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	KLAMATH SUCKER	15.8	1.7	5.9	1.10	0.05	0.07	0.0	-	0.07	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	LARGEMOUTH BASS	10.2	0.5	3.1	0.52	0.27	0.00	0.0	-	0.80	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	YELLOW PERCH	7.9	0.2	3.2	0.02	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	YELLOW PERCH	7.7	0.2	3.1	0.01	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 48, ROGUE RIVER AT GOLDRAY DAM, OR

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
70	BROWN BULLHEAD	10.8	0.7	3.4	0.50	0.34	0.23	-	-	1.04	-	0.03	0.00	0.00	-	-	-	-	0.05	-
70	BROWN BULLHEAD	10.8	0.6	3.7	0.36	0.31	0.25	-	-	1.23	-	0.02	0.00	0.00	-	-	-	-	0.02	-
70	CARP	15.2	2.6	8.9	0.46	0.22	0.25	-	-	2.60	-	0.01	0.00	0.00	-	-	-	-	0.02	-
70	LARGEMOUTH BASS	9.5	0.6	5.1	0.37	0.23	0.17	-	-	0.87	-	0.02	0.00	0.00	-	-	-	-	0.01	-
71	BLACK CRAPPIE	9.0	0.5	5.6	0.28	0.21	0.17	-	-	1.04	-	0.02	0.00	-	-	-	0.00	-	-	-
71	BLACK CRAPPIE	9.0	0.6	7.4	0.52	0.25	0.19	-	-	1.56	-	0.03	0.00	-	-	-	0.00	-	-	-
71	BRIDGELIP SUCKER	12.7	1.2	6.4	0.21	0.20	0.20	-	-	1.09	-	0.02	0.00	-	-	-	0.00	-	-	-
71	BRIDGELIP SUCKER	13.8	1.4	5.9	0.20	0.18	0.18	-	-	1.04	-	0.02	0.00	-	-	-	0.00	-	-	-
71	BROWN BULLHEAD	10.4	0.6	7.4	0.32	0.23	0.10	-	-	0.50	-	0.02	0.00	-	-	-	0.00	-	-	-
71	BROWN BULLHEAD	10.2	0.5	2.8	0.27	0.20	0.10	-	-	0.50	-	0.01	0.00	-	-	-	0.00	-	-	-
72	BROWN BULLHEAD	10.6	0.6	3.3	0.30	0.13	0.07	-	-	0.00	-	1.40	0.00	0.00	-	-	0.00	-	-	-
72	BROWN BULLHEAD	10.4	0.6	3.1	0.24	0.11	0.04	-	-	0.60	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	CARP	12.8	1.4	3.4	0.75	0.24	0.00	-	-	1.40	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	BLACK CRAPPIE	10.3	0.7	8.7	1.30	0.31	0.00	0.0	-	0.00	0.0	0.03	0.00	0.00	-	-	0.00	-	-	-
73	BROWN BULLHEAD	9.4	0.4	2.8	0.25	0.15	0.02	0.4	-	0.00	0.0	0.01	0.00	0.00	-	-	0.00	-	-	-
73	BROWN BULLHEAD	9.0	0.4	2.3	0.32	0.10	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	11.9	1.4	9.4	0.23	0.14	0.00	2.7	-	2.70	0.0	0.03	0.00	0.00	-	-	0.00	-	-	-

STATION 45, WILLAMETTE RIVER AT OREGON CITY, OR

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIEL-DRIN	EN-DRIN	HEPTA-CHLOR	CIS CHLOR-DANE	TRANS CHLOR-DANE	OTHER COMPOUNDS TOXA-PHENE	HCB	A-BHC	G-BHC
70	CARP	19.0	5.0	15.1	0.34	0.35	0.11	-	-	1.25	-	0.07	0.00	0.00	-	-	-	-	0.06	-
70	LARGESCALE SUCKER	15.3	1.8	7.2	0.57	0.72	0.81	-	-	2.40	-	0.04	0.00	0.00	-	-	-	-	0.06	-
70	LARGESCALE SUCKER	15.9	1.7	2.5	0.64	0.77	0.44	-	-	4.58	-	0.04	0.00	0.00	-	-	-	-	0.04	-
70	CROSSCHECK	-	-	4.5	0.20	0.46	0.05	-	3.6	5.20	0.8	0.04	0.00	0.00	-	-	0.00	-	-	-
71	LARGESCALE SUCKER	15.9	1.8	4.8	0.25	0.32	0.21	-	-	1.67	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	LARGESCALE SUCKER	15.8	1.8	6.4	0.25	0.35	0.18	-	-	1.35	-	0.02	0.00	0.00	-	-	0.00	-	-	-
71	NORTHERN SQUAWFISH	13.7	1.2	3.7	0.37	0.41	0.14	-	-	2.37	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	NORTHERN SQUAWFISH	13.5	1.1	4.4	0.33	0.24	0.21	-	-	2.60	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	LARGESCALE SUCKER	14.6	1.4	5.3	0.40	0.16	0.00	-	-	2.80	-	0.02	0.00	0.00	-	-	0.00	-	-	-
72	LARGESCALE SUCKER	14.8	1.3	5.7	0.50	0.29	0.51	-	-	5.40	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	CHANNEL CATFISH	13.7	1.0	12.1	0.57	0.28	0.15	-	-	4.40	-	0.06	0.00	0.00	-	-	0.00	-	-	-
72	NORTHERN SQUAWFISH	14.3	1.2	4.1	0.57	0.13	0.00	-	-	3.00	-	0.02	0.00	0.00	-	-	0.00	-	-	-
73	CARP	14.3	1.3	5.6	0.35	0.00	0.00	0.0	-	0.20	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGESCALE SUCKER	16.1	1.5	4.8	0.31	0.15	0.00	0.0	-	2.40	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	3.7	0.16	0.26	0.05	0.0	0.8	0.80	0.4	0.01	0.00	0.00	0.04	-	0.00	0.00	0.01	0.00
73	LARGESCALE SUCKER	16.7	1.6	3.2	0.21	0.11	0.00	0.0	-	1.60	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	NORTHERN SQUAWFISH	16.0	1.6	5.4	0.53	0.14	0.00	0.0	-	2.80	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CARP	12.8	0.9	6.0	0.68	0.33	0.00	0.0	-	0.00	0.1	0.03	0.00	0.00	-	-	0.00	-	-	-
74	LARGESCALE SUCKER	17.2	1.9	3.1	0.15	0.03	0.02	0.0	-	1.30	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	LARGESCALE SUCKER	14.4	1.5	8.1	0.50	0.15	0.17	4.5	-	2.70	0.0	0.04	0.00	0.00	-	-	0.00	-	-	-
74	NORTHERN SQUAWFISH	18.3	2.3	6.4	0.19	0.06	0.00	0.0	-	2.30	0.0	0.03	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	6.8	0.27	0.06	0.00	0.0	0.0	1.07	0.0	0.01	0.00	0.01	0.03	0.00	0.00	0.00	0.01	0.01

STATION 46, COLUMBIA RIVER AT CASCADE LOCKS, OR/WA

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES			PCB'S (AROCLOR MIXTURES)				CYCLODIENE INSECTICIDES					OTHER COMPOUNDS			
					DDE	DDD	DDT	1242	1248	1254	1260	DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	TOXAPHENE	HCB	A-BHC	G-BHC
70	LARGESCALE SUCKER	16.9	2.0	6.4	0.22	0.12	0.08	-	-	0.44	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	NORTHERN SQUAWFISH	12.7	0.8	5.6	1.41	0.51	0.23	-	-	2.08	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	NORTHERN SQUAWFISH	13.8	1.1	5.6	0.93	0.34	0.18	-	-	1.41	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	CROSSCHECK	-	-	5.3	1.38	0.48	0.00	-	0.6	0.40	1.0	0.02	0.00	0.00	-	-	0.00	-	-	-
71	CARP	11.7	1.0	4.5	0.11	0.03	0.02	-	-	0.13	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	CARP	11.3	0.9	1.7	0.25	0.10	0.03	-	-	0.25	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	LARGESCALE SUCKER	16.2	1.8	3.2	0.32	0.22	0.20	-	-	0.29	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	LARGESCALE SUCKER	15.8	1.8	5.4	0.47	0.37	0.27	-	-	0.95	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	NORTHERN SQUAWFISH	13.6	1.3	4.8	0.94	0.24	0.08	-	-	0.98	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	NORTHERN SQUAWFISH	14.6	4.4	4.3	0.85	0.19	0.06	-	-	0.83	-	0.01	0.01	0.00	-	-	0.00	-	-	-
72	CARP	11.9	1.0	5.0	0.50	0.18	0.00	-	-	0.10	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	LARGESCALE SUCKER	16.0	1.7	4.7	0.47	0.38	0.24	-	-	1.40	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	13.7	1.1	7.4	0.23	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGESCALE SUCKER	17.7	1.9	3.6	0.28	0.11	0.00	0.0	-	0.80	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGESCALE SUCKER	17.6	1.8	6.0	0.22	0.17	0.00	0.0	-	0.93	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	NORTHERN SQUAWFISH	11.9	0.6	3.6	0.24	0.00	0.00	0.0	-	0.50	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CARP	14.1	1.2	6.4	0.32	0.12	0.00	0.0	-	0.18	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	LARGESCALE SUCKER	16.3	1.4	3.0	2.00	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	LARGESCALE SUCKER	17.8	1.7	2.5	0.02	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	NORTHERN SQUAWFISH	16.5	1.5	6.8	1.20	0.28	0.00	0.0	-	2.60	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	8.5	0.36	0.23	0.02	0.0	0.0	1.21	0.5	0.01	0.00	0.01	0.03	0.01	0.00	0.00	0.01	0.01

STATION 96, SNAKE RIVER AT ICE HARBOR DAM, WA

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES			PCB'S (AROCLOR MIXTURES)				CYCLODIENE INSECTICIDES					OTHER COMPOUNDS			
					DDE	DDD	DDT	1242	1248	1254	1260	DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	TOXAPHENE	HCB	A-BHC	G-BHC
70	BRIDGELIP SUCKER	12.1	0.8	4.9	0.44	0.27	0.19	-	-	0.50	-	0.01	0.00	0.00	-	-	-	-	0.03	-
70	CHANNEL CATFISH	13.1	1.2	9.8	0.75	0.24	0.12	-	-	0.65	-	0.01	0.00	0.00	-	-	-	-	0.03	-
70	CHANNEL CATFISH	14.3	1.3	8.6	1.05	0.42	0.22	-	-	1.35	-	0.03	0.00	0.00	-	-	-	-	0.04	-
70	NORTHERN SQUAWFISH	12.6	0.7	5.3	2.23	0.43	0.16	-	-	2.50	-	0.03	0.00	0.00	-	-	-	-	0.01	-
70	CROSSCHECK	-	-	5.2	1.10	0.30	0.01	-	0.4	1.60	0.8	0.02	0.00	0.00	-	-	0.00	-	-	-
71	CARP	13.1	1.6	4.0	0.53	0.21	0.03	-	-	0.16	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	CARP	12.4	1.6	6.4	0.31	0.14	0.05	-	-	0.22	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	LARGESCALE SUCKER	14.1	1.1	4.0	0.24	0.16	0.06	-	-	0.32	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	LARGESCALE SUCKER	13.5	1.0	2.4	0.13	0.06	0.05	-	-	0.15	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	14.3	1.6	3.2	0.56	0.18	0.10	-	-	0.77	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	CHANNEL CATFISH	14.7	1.9	9.1	0.46	0.19	0.11	-	-	0.47	-	0.02	0.00	0.00	-	-	0.00	-	-	-
72	LARGESCALE SUCKER	13.5	1.0	4.7	0.16	0.07	0.08	-	-	0.22	-	0.03	0.00	0.00	-	-	0.00	-	-	-
72	CHANNEL CATFISH	12.5	0.9	9.4	0.00	0.45	0.16	-	-	1.30	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	NORTHERN SQUAWFISH	8.7	0.3	8.3	0.36	0.08	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	NORTHERN SQUAWFISH	8.5	0.3	9.8	0.31	0.12	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGESCALE SUCKER	14.0	1.0	4.3	0.20	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGESCALE SUCKER	14.6	1.0	2.6	0.21	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CHANNEL CATFISH	16.3	1.4	8.0	0.57	0.00	0.00	0.0	-	0.00	0.5	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	9.7	1.59	0.18	0.12	0.0	0.2	0.00	0.6	0.03	0.00	0.00	0.00	-	0.00	0.02	0.02	0.00
73	NORTHERN SQUAWFISH	16.2	1.6	2.8	1.80	0.16	0.00	0.0	-	3.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	BRIDGELIP SUCKER	12.9	0.7	10.7	0.34	0.29	0.20	0.0	-	0.00	0.0	0.09	0.00	0.00	-	-	0.00	-	-	-
74	LARGESCALE SUCKER	13.6	0.6	4.3	0.28	0.07	0.04	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	LARGESCALE SUCKER	14.1	0.9	5.0	0.36	0.11	0.06	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CHANNEL CATFISH	12.8	0.7	11.3	0.80	0.22	0.08	0.0	-	0.45	0.0	0.04	0.00	0.00	-	-	0.00	-	-	-

STATION 42, SNAKE RIVER AT LEWISTON, ID/WA

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES			PCB'S (AROCLOR MIXTURES)				CYCLODIENE INSECTICIDES					OTHER COMPOUNDS			
					DDE	DDD	DDT	1242	1248	1254	1260	DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	TOXAPHENE	HCB	A-BHC	G-BHC
70	CARP	15.3	2.3	10.8	0.47	0.15	0.07	-	-	0.29	-	0.05	0.00	0.00	-	-	-	-	0.02	-
70	LARGESCALE SUCKER	15.8	1.8	7.8	0.24	0.14	0.15	-	-	0.23	-	0.03	0.00	0.00	-	-	-	-	0.01	-
70	LARGESCALE SUCKER	15.3	1.6	8.8	0.16	0.11	0.13	-	-	0.40	-	0.03	0.00	0.00	-	-	-	-	0.01	-
70	SMALLMOUTH BASS	11.0	0.8	5.0	0.33	0.09	0.08	-	-	0.53	-	0.04	0.00	0.00	-	-	-	-	0.01	-
71	CARP	14.9	2.0	5.7	0.14	0.09	0.10	-	-	1.06	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	CARP	14.5	2.4	3.6	0.18	0.05	0.04	-	-	0.25	-	0.01	0.00	0.00	-	-	0.01	-	-	-
71	NORTHERN SQUAWFISH	14.0	1.2	4.6	1.07	0.10	0.16	-	-	0.98	-	0.02	0.00	0.00	-	-	0.01	-	-	-
71	NORTHERN SQUAWFISH	14.0	1.2	2.8	0.93	0.19	0.19	-	-	1.31	-	0.02	0.00	0.00	-	-	0.00	-	-	-
71	SMALLMOUTH BASS	11.2	1.1	7.4	0.54	0.14	0.17	-	-	0.47	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	SMALLMOUTH BASS	10.4	0.7	6.3	0.69	0.13	0.17	-	-	0.58	-	0.03	0.01	0.00	-	-	0.00	-	-	-
72	CARP	17.1	3.1	5.3	1.10	0.29	0.00	-	-	2.10	-	0.11	0.00	0.00	-	-	0.00	-	-	-
72	LARGESCALE SUCKER	14.1	1.2	5.8	0.21	0.09	0.07	-	-	0.41	-	0.07	0.00	0.00	-	-	0.00	-	-	-
72	LARGESCALE SUCKER	15.0	1.4	4.2	0.26	0.15	0.18	-	-	0.50	-	0.07	0.00	0.00	-	-	0.00	-	-	-
72	NORTHERN SQUAWFISH	15.4	1.6	6.3	1.60	0.26	0.01	-	-	1.70	-	0.26	0.00	0.00	-	-	0.00	-	-	-
73	BLACK CRAPPIE	9.6	0.7	7.5	0.27	0.12	0.00	0.0	-	0.00	0.0	0.00	0.06	0.00	-	-	0.00	-	-	-
73	BLACK CRAPPIE	9.8	0.6	6.6	0.41	0.15	0.19	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	17.3	2.7	7.3	0.31	0.31	0.19	0.0	-	0.00	0.0	0.12	0.00	0.00	-	-	0.00	-	-	-
73	LARGESCALE SUCKER	17.2	1.9	7.7	0.19	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	BLACK CRAPPIE	-	-	7.5	0.50	0.00	0.00	0.0	-	0.27	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	LARGESCALE SUCKER	13.7	1.0	8.4	0.21	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	LARGESCALE SUCKER	16.3	1.5	8.1	0.21	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	NORTHERN SQUAWFISH	0.0	0.0	4.7	1.00	0.00	0.00	0.0	-	1.10	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 41, SNAKE RIVER AT HAGERMAN, ID

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES			PCB'S (AROCLOR MIXTURES)				CYCLODIENE INSECTICIDES					OTHER COMPOUNDS			
					DDE	DDD	DDT	1242	1248	1254	1260	DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	TOXAPHENE	HCB	A-BHC	G-BHC
70	LARGESCALE SUCKER	13.0	1.0	5.4	0.21	0.08	0.06	-	-	0.31	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	LARGESCALE SUCKER	12.6	0.9	4.6	0.30	0.10	0.07	-	-	0.29	-	0.02	0.00	0.00	-	-	-	-	0.01	-
70	NORTHERN SQUAWFISH	15.4	1.7	3.9	1.64	0.26	0.13	-	-	1.16	-	0.02	0.00	0.00	-	-	-	-	0.01	-
70	RAINBOW TROUT	14.2	1.3	5.8	2.54	0.21	0.21	-	-	0.12	-	0.02	0.00	0.00	-	-	-	-	0.01	-
71	LARGESCALE SUCKER	12.6	1.0	5.5	0.09	0.08	0.06	-	-	0.15	-	0.04	0.00	0.00	-	-	0.00	-	-	-
71	LARGESCALE SUCKER	13.0	1.0	3.6	0.17	0.07	0.06	-	-	0.33	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	NORTHERN SQUAWFISH	14.4	1.3	4.0	1.87	0.32	0.22	-	-	1.67	-	0.00	0.00	0.00	-	-	0.00	-	-	-
71	NORTHERN SQUAWFISH	14.3	1.3	3.2	1.59	0.32	0.19	-	-	1.80	-	0.02	0.00	0.00	-	-	0.00	-	-	-
71	PEAMOUTH	9.4	0.3	6.0	0.34	0.15	0.10	-	-	0.69	-	0.02	0.00	0.00	-	-	0.00	-	-	-
71	PEAMOUTH	9.5	0.4	5.3	0.60	0.13	0.08	-	-	0.56	-	0.02	0.00	0.00	-	-	0.00	-	-	-
72	LARGESCALE SUCKER	11.3	0.7	5.9	0.32	0.12	0.06	-	-	0.50	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	LARGESCALE SUCKER	12.1	0.9	8.1	0.44	0.23	0.44	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	NORTHERN SQUAWFISH	10.6	0.6	3.7	2.50	0.15	0.00	-	-	3.70	-	0.04	0.00	0.00	-	-	0.00	-	-	-
72	PEAMOUTH	9.2	0.3	7.5	0.66	0.10	0.00	-	-	1.40	-	0.07	0.00	0.00	-	-	0.00	-	-	-
73	LARGESCALE SUCKER	15.9	1.7	8.0	0.46	0.00	0.11	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGESCALE SUCKER	16.1	1.5	6.2	0.23	0.00	0.13	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	NORTHERN SQUAWFISH	15.4	1.4	7.6	0.93	0.00	0.00	0.0	-	0.31	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	RAINBOW TROUT	14.8	1.5	8.7	0.30	0.00	0.00	0.0	-	0.00	0.0	0.03	0.00	0.00	-	-	0.00	-	-	-
74	CARP	12.6	1.2	8.8	0.34	0.08	0.00	0.0	-	0.14	0.0	0.03	0.00	0.00	-	-	0.00	-	-	-
74	CARP	11.2	0.9	6.7	0.29	0.09	0.00	0.0	-	0.11	0.0	0.02	0.00	0.00	-	-	0.00	-	-	-
74	NORTHERN SQUAWFISH	17.2	1.7	3.3	4.30	0.30	0.00	0.0	-	3.30	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	RAINBOW TROUT	11.4	0.6	2.0	0.59	0.09	0.00	0.0	-	0.53	0.0	0.01	0.00	0.00	-	-	0.00	-	-	-

STATION 43, SALMON RIVER AT RIGGINS, ID

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	CARP	13.1	1.5	3.1	0.09	0.03	0.02	-	-	0.14	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	LARGESCALE SUCKER	17.4	2.3	5.4	0.12	0.04	0.04	-	-	0.21	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	LARGESCALE SUCKER	17.7	2.3	3.5	0.10	0.05	0.06	-	-	0.42	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	NORTHERN SQUAWFISH	13.1	1.0	5.2	0.74	0.08	0.05	-	-	0.55	-	0.01	0.00	0.00	-	-	-	-	0.01	-
71	CARP	15.4	2.4	4.8	0.06	0.02	0.01	-	-	0.06	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	LONGNOSE SUCKER	15.3	1.7	3.7	0.07	0.02	0.02	-	-	0.05	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	LONGNOSE SUCKER	15.8	1.8	5.1	0.75	0.21	0.10	-	-	0.24	-	0.03	0.00	0.00	-	-	0.00	-	-	-
71	NORTHERN SQUAWFISH	11.2	0.6	4.8	0.01	0.05	0.05	-	-	0.52	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	NORTHERN SQUAWFISH	13.9	1.2	5.2	0.12	0.04	0.03	-	-	0.02	-	0.00	0.00	0.00	-	-	0.00	-	-	-
71	SMALLMOUTH BASS	11.3	1.0	6.2	0.14	0.02	0.04	-	-	0.15	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	LARGESCALE SUCKER	14.5	1.3	5.2	0.09	0.03	0.06	-	-	0.10	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	LARGESCALE SUCKER	13.7	1.2	2.9	0.12	0.04	0.05	-	-	0.10	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	NORTHERN SQUAWFISH	9.3	0.3	5.1	0.22	0.03	0.02	-	-	0.40	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	SMALLMOUTH BASS	9.6	0.6	2.5	0.36	0.02	0.00	-	-	0.40	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	BROWN BULLHEAD	7.5	0.2	7.5	0.01	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	BROWN BULLHEAD	8.3	0.3	1.0	0.01	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGESCALE SUCKER	17.5	1.8	4.3	0.12	0.01	0.04	0.0	-	0.15	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	SMALLMOUTH BASS	13.2	1.4	6.9	0.14	0.05	0.10	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CARP	13.4	1.2	3.1	0.03	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	LARGESCALE SUCKER	17.8	2.0	5.6	0.18	0.04	0.04	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	SMALLMOUTH BASS	8.2	0.2	2.1	0.05	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 44, YAKIMA RIVER AT GRANGER, WA

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	BRIDGELIP SUCKER	14.0	1.2	7.9	0.66	0.48	1.03	-	-	0.44	-	0.06	0.00	0.00	-	-	-	-	0.02	-
70	CARP	11.2	1.1	5.6	0.89	0.03	0.15	-	-	1.93	-	0.03	0.00	0.00	-	-	-	-	0.01	-
70	CARP	11.3	1.0	5.0	1.70	0.35	0.17	-	-	0.56	-	0.02	0.00	0.00	-	-	-	-	0.01	-
70	LARGEMOUTH BASS	12.3	1.4	3.9	1.66	0.51	0.42	-	-	0.63	-	0.08	0.00	0.00	-	-	-	-	0.01	-
71	BLACK CRAPPIE	7.4	0.3	1.9	0.49	0.14	0.18	-	-	0.28	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	BLACK CRAPPIE	7.4	0.3	2.3	0.55	0.14	0.16	-	-	0.21	-	0.03	0.00	0.00	-	-	0.00	-	-	-
71	CARP	11.9	1.1	4.4	1.07	0.25	0.17	-	-	0.15	-	0.01	0.01	0.00	-	-	0.01	-	-	-
71	CARP	11.9	1.2	5.0	1.02	0.38	0.08	-	-	0.30	-	0.02	0.01	0.00	-	-	0.00	-	-	-
71	LARGESCALE SUCKER	14.0	1.2	4.9	1.12	0.52	1.04	-	-	0.33	-	0.01	0.01	0.00	-	-	0.01	-	-	-
71	LARGESCALE SUCKER	14.1	1.2	5.4	0.71	0.38	0.55	-	-	0.34	-	0.02	0.01	0.00	-	-	0.00	-	-	-
72	CARP	10.5	0.8	6.4	2.20	0.42	0.14	-	-	1.70	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	LARGESCALE SUCKER	14.6	1.1	4.3	0.92	0.44	0.64	-	-	1.40	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	LARGESCALE SUCKER	14.0	1.0	4.2	1.10	0.55	0.78	-	-	1.70	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	NORTHERN SQUAWFISH	10.8	0.5	3.8	2.70	0.34	0.01	-	-	3.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CARP	13.4	1.2	5.4	0.52	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGESCALE SUCKER	15.3	1.3	6.0	0.88	0.39	0.51	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LARGESCALE SUCKER	14.4	1.2	12.0	1.00	0.47	0.67	0.0	-	0.00	0.0	0.16	0.00	0.00	-	-	0.00	-	-	-
73	LARGEMOUTH BASS	13.8	1.7	4.2	0.77	0.14	0.11	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CARP	13.2	1.1	4.9	3.10	0.80	0.44	0.0	-	0.00	0.2	0.17	0.00	0.00	-	-	0.00	-	-	-
74	CARP	12.2	0.9	4.9	2.20	0.55	0.19	0.0	-	0.00	0.1	0.12	0.00	0.00	-	-	0.00	-	-	-
74	LARGESCALE SUCKER	13.1	0.8	5.1	1.10	0.69	0.54	0.0	-	0.00	0.2	0.08	0.00	0.00	-	-	0.00	-	-	-
74	SMALLMOUTH BASS	12.2	1.1	4.8	1.40	0.39	0.31	0.0	-	0.00	0.2	0.08	0.00	0.00	-	-	0.00	-	-	-

STATION 97, COLUMBIA RIVER AT PASCO, WA

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	CARP	12.6	1.3	5.0	1.12	0.24	0.06	-	-	0.17	-	0.02	0.00	0.00	-	-	-	-	0.01	-
70	LARGESCALE SUCKER	17.2	2.6	7.6	0.57	0.34	0.42	-	-	1.20	-	0.02	0.00	0.00	-	-	-	-	0.02	-
70	LARGESCALE SUCKER	16.3	2.1	8.9	0.74	0.55	0.38	-	-	0.94	-	0.02	0.00	0.00	-	-	-	-	0.03	-
70	MOUNTAIN WHITEFISH	12.0	0.5	7.6	1.41	0.47	0.35	-	-	0.83	-	0.03	0.00	0.00	-	-	-	-	0.04	-
71	CARP	12.3	1.3	5.9	0.53	0.15	0.02	-	-	0.22	-	0.01	0.00	0.02	-	-	0.00	-	-	-
71	CARP	12.1	1.3	4.4	0.21	0.10	0.02	-	-	0.17	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	LARGESCALE SUCKER	17.2	2.0	4.8	0.71	0.34	0.20	-	-	0.38	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	LARGESCALE SUCKER	17.1	2.1	8.2	0.65	0.52	0.43	-	-	0.23	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	NORTHERN SQUAWFISH	12.2	0.8	4.5	1.76	0.52	0.08	-	-	1.10	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	NORTHERN SQUAWFISH	11.6	0.7	5.0	1.23	0.27	0.10	-	-	1.18	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	CARP	12.2	1.0	4.5	0.67	0.25	0.01	-	-	1.40	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	LARGESCALE SUCKER	14.7	1.2	4.6	1.10	0.45	0.12	-	-	2.30	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	LARGESCALE SUCKER	14.7	1.2	4.9	0.91	0.59	0.12	-	-	3.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	NORTHERN SQUAWFISH	13.5	1.0	2.1	3.00	0.37	0.00	-	-	2.70	-	0.14	0.00	0.00	-	-	0.00	-	-	-
73	CARP	11.7	0.8	2.1	0.24	0.07	0.01	0.0	-	0.00	0.0	0.01	0.00	0.00	-	-	0.00	-	-	-
73	CARP	12.2	0.8	3.5	0.27	0.07	0.00	0.0	-	0.00	0.0	0.06	0.00	0.00	-	-	0.00	-	-	-
73	LARGESCALE SUCKER	14.2	1.1	4.9	0.02	0.00	0.00	0.0	-	0.10	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	NORTHERN SQUAWFISH	13.6	0.9	8.0	0.18	0.35	0.00	0.0	-	1.30	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	CARP	12.8	1.0	5.6	1.40	0.80	0.16	0.0	-	0.00	0.2	0.10	0.00	0.00	-	-	0.00	-	-	-
74	CARP	13.0	0.9	5.2	1.70	0.42	0.06	0.0	-	0.00	0.2	0.06	0.00	0.00	-	-	0.00	-	-	-
74	LARGESCALE SUCKER	13.7	0.9	4.4	0.20	0.07	0.04	0.0	-	0.21	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	NORTHERN SQUAWFISH	14.6	1.1	2.4	1.70	0.12	0.00	0.0	-	0.00	1.2	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 98, COLUMBIA RIVER AT GRAND COULEE, WA

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES DDE	DDD	DDT	PCB'S (AROCLOR MIXTURES) 1242	1248	1254	1260	CYCLODIENE INSECTICIDES DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	OTHER COMPOUNDS TOXAPHENE	HCB	A-BHC	G-BHC
70	BRIDGELIP SUCKER	14.1	1.2	6.8	0.04	0.05	0.06	-	-	0.55	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	NORTHERN SQUAWFISH	12.6	0.9	1.3	0.06	0.04	0.04	-	-	0.62	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	WALLEYE	14.3	1.1	4.9	0.10	0.07	0.07	-	-	0.89	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	WALLEYE	14.8	1.3	4.9	0.12	0.08	0.07	-	-	0.89	-	0.01	0.00	0.00	-	-	-	-	0.01	-
71	LARGESCALE SUCKER	13.1	1.0	5.2	0.09	0.06	0.07	-	-	0.42	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	LARGESCALE SUCKER	13.5	1.1	5.1	0.03	0.04	0.04	-	-	0.36	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	NORTHERN SQUAWFISH	14.2	1.4	4.9	0.15	0.09	0.09	-	-	1.19	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	NORTHERN SQUAWFISH	14.0	1.2	10.6	1.19	0.45	0.07	-	-	0.42	-	0.01	0.00	0.00	-	-	0.00	-	-	-
71	WALLEYE	16.1	2.0	8.3	0.10	0.08	0.08	-	-	0.80	-	0.01	0.01	0.00	-	-	0.00	-	-	-
71	WALLEYE	16.9	2.1	9.2	0.12	0.08	0.07	-	-	1.04	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	BRIDGELIP SUCKER	15.3	1.4	6.2	0.03	0.02	0.00	-	-	0.70	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	NORTHERN SQUAWFISH	15.0	1.1	1.5	0.21	0.01	0.00	-	-	4.60	-	0.01	0.00	0.00	-	-	0.00	-	-	-
72	WALLEYE	14.9	1.0	3.9	0.08	0.01	0.01	-	-	3.60	-	0.02	0.00	0.00	-	-	0.00	-	-	-
72	WALLEYE	14.2	0.8	3.6	0.10	0.02	0.01	-	-	2.20	-	0.01	0.00	0.00	-	-	0.00	-	-	-
73	BRIDGELIP SUCKER	14.3	1.1	5.2	0.00	0.00	0.00	0.0	-	0.00	4.6	0.01	0.00	0.00	-	-	0.00	-	-	-
73	BRIDGELIP SUCKER	13.7	0.9	3.3	0.01	0.00	0.01	0.0	-	0.00	0.5	0.01	0.00	0.00	-	-	0.00	-	-	-
73	NORTHERN SQUAWFISH	13.0	0.9	13.4	0.00	0.00	0.00	0.0	-	0.70	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	WALLEYE	14.4	1.1	10.1	0.10	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	5.1	0.06	0.01	0.03	0.0	0.2	1.40	0.8	0.00	0.00	0.00	0.00	-	0.00	0.00	0.11	0.00
74	BRIDGELIP SUCKER	14.2	0.9	7.1	0.00	0.01	0.02	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	NORTHERN SQUAWFISH	14.0	0.9	1.8	0.13	0.02	0.00	0.0	-	0.00	0.3	0.00	0.00	0.00	-	-	0.00	-	-	-
74	WALLEYE	12.6	0.7	3.8	0.06	0.01	0.04	0.0	-	0.00	0.2	0.00	0.00	0.00	-	-	0.00	-	-	-
74	WALLEYE	13.2	0.7	5.2	0.07	0.02	0.05	0.0	-	0.00	0.4	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 49, CHENA RIVER AT FAIRBANKS, AK

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES			PCB'S (AROCLOR MIXTURES)				CYCLODIENE INSECTICIDES					OTHER COMPOUNDS			
					DDE	DDD	DDT	1242	1248	1254	1260	DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	TOXAPHENE	HCB	A-BHC	G-BHC
70	ARCTIC GRAYLING	10.2	0.6	4.1	0.22	0.19	0.22	-	-	1.80	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	LONGNOSE SUCKER	13.5	1.7	6.8	0.16	0.16	0.22	-	-	1.48	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	ROUND WHITEFISH	11.7	1.0	2.8	0.37	0.36	0.35	-	-	3.07	-	0.01	0.01	0.00	-	-	-	-	0.01	-
71	ARCTIC GRAYLING	11.5	0.7	5.1	0.39	0.42	0.42	-	-	3.18	-	0.01	0.00	-	-	-	0.00	-	-	-
71	ARCTIC GRAYLING	12.4	0.9	3.4	0.25	0.18	0.24	-	-	1.46	-	0.01	0.00	-	-	-	0.00	-	-	-
71	LONGNOSE SUCKER	14.1	1.6	4.0	0.34	0.29	0.42	-	-	2.40	-	0.01	0.00	-	-	-	0.00	-	-	-
71	LONGNOSE SUCKER	14.4	1.6	4.4	0.31	0.24	0.34	-	-	1.56	-	0.01	0.00	-	-	-	0.00	-	-	-
71	ROUND WHITEFISH	10.9	0.5	1.7	0.23	0.38	0.40	-	-	3.13	-	0.01	0.00	-	-	-	0.00	-	-	-
71	ROUND WHITEFISH	12.5	0.7	2.6	0.23	0.34	0.34	-	-	2.66	-	0.01	0.00	-	-	-	0.00	-	-	-
72	ARCTIC GRAYLING	10.9	0.7	4.7	0.40	0.00	0.00	-	-	5.30	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	LONGNOSE SUCKER	16.2	2.0	4.6	0.57	0.12	0.41	-	-	3.60	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	LONGNOSE SUCKER	15.5	1.8	5.4	0.33	0.09	0.41	-	-	3.40	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	ROUND WHITEFISH	9.7	0.5	5.0	0.13	0.22	0.36	-	-	2.20	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	ARCTIC GRAYLING	11.6	0.6	3.8	0.12	0.00	0.00	0.0	-	1.70	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	3.5	1.68	0.28	0.03	0.0	0.2	0.80	0.5	0.02	0.00	0.00	0.05	-	0.00	0.00	0.01	0.00
73	LONGNOSE SUCKER	14.3	1.3	3.6	0.12	0.00	0.00	0.0	-	2.10	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	ROUND WHITEFISH	11.1	0.4	1.6	0.12	0.00	0.00	0.0	-	1.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	ROUND WHITEFISH	11.3	0.4	2.4	0.06	0.00	0.00	0.0	-	0.80	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 50, KENAI RIVER AT SOLDATNA, AK

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES			PCB'S (AROCLOR MIXTURES)				CYCLODIENE INSECTICIDES					OTHER COMPOUNDS			
					DDE	DDD	DDT	1242	1248	1254	1260	DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	TOXAPHENE	HCB	A-BHC	G-BHC
70	LAKE TROUT	13.7	0.9	1.8	0.05	0.01	0.01	-	-	0.15	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	RAINBOW TROUT	16.3	1.5	5.8	0.06	0.02	0.02	-	-	0.13	-	0.01	0.00	0.00	-	-	-	-	0.01	-
70	ROUND WHITEFISH	12.1	0.7	4.4	0.01	0.01	0.01	-	-	0.06	-	0.01	0.00	0.00	-	-	-	-	0.04	-
71	LAKE TROUT	16.7	1.2	1.5	0.04	0.01	0.03	-	-	0.13	-	0.01	0.01	-	-	-	0.00	-	-	-
71	LAKE TROUT	16.4	1.2	1.5	0.06	0.01	0.03	-	-	0.14	-	0.01	0.01	-	-	-	0.00	-	-	-
71	RAINBOW TROUT	10.4	0.5	3.5	0.01	0.01	0.01	-	-	0.12	-	0.00	0.00	-	-	-	0.00	-	-	-
71	RAINBOW TROUT	11.1	0.6	7.4	0.03	0.02	0.01	-	-	0.18	-	0.00	0.00	-	-	-	0.00	-	-	-
71	ROUND WHITEFISH	11.7	0.5	2.6	0.01	0.02	0.04	-	-	0.34	-	0.01	0.00	-	-	-	0.00	-	-	-
71	ROUND WHITEFISH	13.8	0.8	1.8	0.01	0.01	0.01	-	-	0.04	-	0.01	0.00	-	-	-	0.00	-	-	-
72	LAKE TROUT	14.0	0.9	3.4	0.06	0.01	0.01	-	-	0.20	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	LAKE TROUT	14.6	1.0	2.0	0.03	0.01	0.01	-	-	0.20	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	RAINBOW TROUT	9.8	0.4	10.6	0.06	0.00	0.00	-	-	0.20	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	ROUND WHITEFISH	12.0	0.5	2.7	0.01	0.00	0.00	-	-	0.10	-	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LAKE TROUT	15.2	1.0	6.0	0.02	0.00	0.00	0.0	-	0.30	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	LAKE TROUT	14.9	0.9	2.2	0.02	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
73	RAINBOW TROUT	13.4	1.1	7.4	0.01	0.00	0.00	0.0	-	0.10	0.0	0.00	0.00	0.00	-	-	0.10	-	-	-
73	ROUND WHITEFISH	10.8	0.4	3.3	0.01	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	LAKE TROUT	15.8	1.2	9.5	0.03	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	RAINBOW TROUT	13.0	0.9	12.6	0.03	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	ROUND WHITEFISH	12.0	0.5	1.9	0.01	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-
74	ROUND WHITEFISH	11.8	0.6	3.8	0.00	0.00	0.00	0.0	-	0.00	0.0	0.00	0.00	0.00	-	-	0.00	-	-	-

STATION 99, HAIKELE STREAM AT HAIPAHU, HI

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES			PCB'S (AROCLOR MIXTURES)				CYCLODIENE INSECTICIDES					OTHER COMPOUNDS			
					DDE	DDD	DDT	1242	1248	1254	1260	DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	TOXAPHENE	HCB	A-BHC	G-BHC
70	CUBAN LIMIA	2.6	0.1	8.4	0.25	0.42	0.44	-	-	1.20	-	0.74	0.00	0.00	-	-	-	-	0.05	-
70	TILAPIA	6.1	0.1	5.7	0.12	0.14	0.13	-	-	0.40	-	0.20	0.00	0.00	-	-	-	-	0.03	-
70	CHINESE CATFISH	8.1	0.1	5.1	1.76	0.94	0.38	-	-	1.46	-	0.34	0.00	0.00	-	-	-	-	0.05	-
70	CHINESE CATFISH	9.4	0.2	2.5	0.88	0.47	0.22	-	-	1.20	-	0.18	0.00	0.00	-	-	-	-	0.01	-
71	CUBAN LIMIA	3.3	-	8.1	0.18	0.30	0.26	-	-	0.51	-	0.09	0.00	0.00	-	-	0.00	-	-	-
71	CUBAN LIMIA	3.2	-	9.4	0.21	0.25	0.31	-	-	0.62	-	0.43	0.01	0.00	-	-	0.00	-	-	-
71	TILAPIA	5.5	0.1	4.3	0.11	0.13	0.11	-	-	0.33	-	0.15	0.00	0.00	-	-	0.00	-	-	-
71	TILAPIA	5.2	0.1	4.0	0.10	0.12	0.13	-	-	0.35	-	0.18	0.00	0.00	-	-	0.00	-	-	-
71	CHINESE CATFISH	8.0	0.2	6.0	0.26	0.20	0.17	-	-	0.42	-	0.19	0.00	0.00	-	-	0.00	-	-	-
71	CHINESE CATFISH	7.9	0.2	6.9	0.16	0.14	0.09	-	-	0.35	-	0.14	0.00	0.00	-	-	0.00	-	-	-
72	CUBAN LIMIA	3.4	-	5.5	0.68	0.94	0.89	-	-	0.00	-	0.26	0.00	0.00	-	-	0.00	-	-	-
72	TILAPIA	5.0	0.1	4.1	0.46	0.92	0.01	-	-	0.00	-	0.16	0.00	0.00	-	-	0.00	-	-	-
72	CHINESE CATFISH	8.5	0.2	3.1	0.67	0.69	0.20	-	-	1.70	-	0.21	0.00	0.00	-	-	0.00	-	-	-
72	CHINESE CATFISH	8.3	0.2	3.3	0.62	0.45	0.11	-	-	1.00	-	0.14	0.00	0.00	-	-	0.00	-	-	-
73	CUBAN LIMIA	3.0	0.1	1.1	0.56	0.43	1.10	0.0	-	0.00	0.0	0.06	0.00	0.00	-	-	0.00	-	-	-
73	TILAPIA	5.8	0.1	0.8	0.17	0.25	0.36	0.0	-	0.00	0.0	0.03	0.00	0.00	-	-	0.00	-	-	-
73	CHINESE CATFISH	8.9	0.2	2.2	0.53	0.50	0.67	0.0	-	0.00	1.6	0.09	0.00	0.00	-	-	0.00	-	-	-
73	CHINESE CATFISH	8.4	0.2	4.2	0.52	0.73	0.50	0.0	-	0.00	0.0	0.19	0.00	0.00	-	-	0.00	-	-	-
74	CUBAN LIMIA	2.5	0.1	4.3	0.51	0.21	0.40	0.0	-	0.00	0.0	0.77	0.00	0.00	-	-	0.00	-	-	-
74	TILAPIA	6.2	0.2	1.5	0.10	0.00	0.00	0.0	-	0.00	0.0	0.05	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	1.1	0.09	0.05	0.02	0.0	0.0	0.37	0.0	0.01	0.01	0.01	0.02	0.01	0.00	0.01	0.01	0.01
74	CHINESE CATFISH	8.3	0.2	5.6	0.81	0.00	0.00	0.0	-	0.00	0.0	0.39	0.00	0.00	-	-	0.00	-	-	-
74	CHINESE CATFISH	8.8	0.2	5.4	0.12	0.40	0.44	0.0	-	1.60	0.0	0.22	0.00	0.00	-	-	0.00	-	-	-

STATION 100, MANOA STREAM AT HONOLULU, HI

YEAR	SPECIES	MEAN TL (IN)	MEAN WT (LB)	LIPID (%)	P,P'-DDT HOMOLOGUES			PCB'S (AROCLOR MIXTURES)				CYCLODIENE INSECTICIDES					OTHER COMPOUNDS			
					DDE	DDD	DDT	1242	1248	1254	1260	DIELDRIN	ENDRIN	HEPTACHLOR	CIS CHLORDANE	TRANS CHLORDANE	TOXAPHENE	HCB	A-BHC	G-BHC
70	CUBAN LIMIA	3.5	0.1	8.9	0.52	0.73	0.62	-	-	0.00	-	1.35	0.00	0.00	-	-	-	-	0.02	-
70	TILAPIA	8.0	0.3	4.0	0.11	0.21	0.11	-	-	0.00	-	0.32	0.00	0.00	-	-	-	-	0.14	-
70	CHINESE CATFISH	10.3	0.3	9.5	2.21	1.04	0.65	-	-	0.00	-	0.85	0.00	0.00	-	-	-	-	0.50	-
70	CHINESE CATFISH	8.8	0.2	7.0	1.43	0.85	0.48	-	-	0.00	-	0.65	0.00	0.00	-	-	-	-	0.05	-
71	CUBAN LIMIA	3.3	-	-	0.00	0.00	0.00	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
71	CUBAN LIMIA	3.1	-	7.6	0.00	0.00	0.00	-	-	0.00	-	3.78	0.14	0.00	-	-	0.00	-	-	-
71	TILAPIA	9.2	0.6	7.4	0.00	0.00	0.00	-	-	0.00	-	2.77	0.16	0.00	-	-	0.00	-	-	-
71	CROSSCHECK	-	-	8.7	0.00	0.00	0.00	-	0.0	0.50	0.0	4.36	0.10	0.00	0.30	-	0.00	0.00	-	-
71	TILAPIA	9.5	0.5	3.4	0.00	0.00	0.00	-	-	0.00	-	2.60	0.13	0.00	-	-	0.00	-	-	-
71	CHINESE CATFISH	10.3	0.4	3.1	0.00	0.00	0.00	-	-	0.00	-	1.50	0.04	0.00	-	-	0.00	-	-	-
71	CHINESE CATFISH	9.8	0.3	3.6	0.00	0.00	0.00	-	-	0.00	-	1.43	0.07	0.00	-	-	0.00	-	-	-
72	CUBAN LIMIA	3.2	0.1	8.5	0.21	0.65	0.80	-	-	0.00	-	0.00	0.00	0.00	-	-	0.00	-	-	-
72	TILAPIA	6.3	0.3	6.0	0.07	0.00	0.23	-	-	0.00	-	0.87	0.00	0.00	-	-	0.00	-	-	-
72	CROSSCHECK	-	-	7.6	0.05	0.00	0.00	-	0.0	0.30	0.0	0.94	0.00	0.10	0.44	-	0.00	0.00	-	-
72	CHINESE CATFISH	8.6	0.2	4.9	0.73	0.08	0.11	-	-	2.30	-	1.20	0.00	0.00	-	-	0.00	-	-	-
72	CHINESE CATFISH	9.2	0.3	4.6	0.47	0.42	0.36	-	-	2.00	-	0.87	0.00	0.00	-	-	0.00	-	-	-
73	CUBAN LIMIA	2.7	0.1	3.8	0.00	0.70	0.00	0.0	-	0.00	0.0	1.20	0.00	0.00	-	-	0.00	-	-	-
73	TILAPIA	9.8	0.5	1.9	0.00	0.23	0.00	0.0	-	0.00	0.0	0.90	0.00	0.00	-	-	0.00	-	-	-
73	CROSSCHECK	-	-	1.9	0.00	0.00	0.00	0.0	0.0	0.00	0.0	18.00	0.02	0.02	7.10	-	0.00	0.00	0.01	0.01
73	CHINESE CATFISH	9.3	0.3	3.9	0.00	0.00	0.00	0.0	-	0.00	0.0	0.41	0.00	0.00	-	-	0.00	-	-	-
73	CHINESE CATFISH	10.0	0.3	3.9	0.00	0.45	0.00	0.0	-	0.00	0.0	0.80	0.00	0.00	-	-	0.00	-	-	-
74	CUBAN LIMIA	2.7	0.1	8.0	0.00	0.00	0.00	0.0	-	0.00	0.0	9.10	0.00	0.00	-	-	0.00	-	-	-
74	TILAPIA	7.7	0.3	2.6	0.00	0.00	0.00	0.0	-	0.00	0.0	1.00	0.00	0.00	-	-	0.00	-	-	-
74	CROSSCHECK	-	-	2.7	0.56	0.00	0.03	0.0	0.0	0.14	0.0	0.37	0.04	0.12	0.60	0.08	0.00	0.00	0.01	0.00
74	CHINESE CATFISH	9.2	0.2	6.0	0.46	0.00	0.00	0.0	-	1.00	0.0	2.00	0.00	0.00	-	-	0.00	-	-	-
74	CHINESE CATFISH	9.3	0.2	2.6	0.18	0.00	0.00	0.0	-	0.50	0.0	0.67	0.00	0.00	-	-	0.00	-	-	-

APPENDIX

Chemical Names of Compounds Discussed in This Issue

AROCLOR 1016 or 1242	PCB, approximately 42% chlorine
AROCLOR 1248	PCB, approximately 48% chlorine
AROCLOR 1254	PCB, approximately 54% chlorine
AROCLOR 1260	PCB, approximately 60% chlorine
ALDRIN	Hexachlorohexahydro-*endo*, *exo*-dimethanonaphthalene 95% and related compounds 5%
BHC (Benzene Hexachloride)	1,2,3,4,5,6-Hexachlorocyclohexane (mixture of isomers)
CHLORDANE	Technical: 60% octachloro-4,7-methanotetrahydroindane and 40% related compounds
DDE	Dichlorodiphenyldichloroethylene (degradation product of DDT)
DDT	Dichloro diphenyl trichloroethane. Principal isomer present (*p,p'*-DDT; not less than 70%): 1,1,1-trichloro-2,2-bis(*p*-chlorophenyl)ethane
DIELDRIN	Hexachloroepoxyoctahydro-*endo,exo*-dimethanonaphthalene 85% and related compounds 15%
ENDRIN	Hexachloroepoxyoctahydro-*endo,endo*-dimethanonaphthalene
HCB	Hexachlorobenzene
HEPTACHLOR	Heptachlorotetrahydro-4,7-methanoindene
HEPTACHLOR EPOXIDE	1,4,5,6,7,8,8-Heptachloro-2,3-*epoxy*-3a,4,7,7a-tetrahydro-4,7-methanoindan
KEPONE	Decachlorooctahydro-1,3,4-metheno-2*H*-cyclobuta[cd]pentalen-2-one
LINDANE	*Gamma* isomer of benzene hexachloride (BHC)
MIREX	Dodecachlorooctahydro-1,3,4-metheno-1*H*-cyclobuta[cd]pentalene
NONACHLOR	1,2,3,4,5,6,7,8,8-Nonachlor-3a,4,7,7a-tetrahydro-4,7-methanoindan
OXYCHLORDANE	1-*exo*-2-*endo*-4,5,6,7,8,8a-Octachloro-2,3-*exo*-*epoxy*-2,3,3a,4,7,7a-hexahydro-4,7-methanoindene
PCBs (Polychlorinated Biphenyls)	Mixtures of chlorinated biphenyl compounds having various percentages of chlorine
TDE	Dichloro diphenyl dichloroethane (1,1-dichloro-2,2-bis(*p*-chlorophenyl)ethane, principal component)
TOXAPHENE	Technical chlorinated camphene (67–69% chlorine)

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SUBJECT AND AUTHOR INDEXES

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Preface

Primary headings in the subject index include pesticide compounds, media in which pesticide residues are monitored, and major concepts related to the monitoring of pesticides in the environment. Pesticide compounds are listed by common names; trade names are used for those which have no common names.

Secondary headings cross-reference the primary headings. For a paper which discusses five or more organochlorines or organophosphates the compounds are grouped by class under media and concept headings but each compound appears individually under the primary headings for pesticide compounds.

In the author index all information on a paper appears in the senior author's citations: associate authors, title of the paper, and volume, issue, and pages where the article was published. Names of associate authors are cross-referenced as minor headings, but the reader is referred to the senior author's entry for the paper's complete citation.

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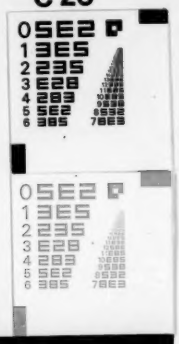
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